

1978

# A National Approach for Marine Scientific Research in Exclusive Economic Zones

Thomas H. Brillat  
*University of Rhode Island*

Follow this and additional works at: [http://digitalcommons.uri.edu/ma\\_etds](http://digitalcommons.uri.edu/ma_etds)

 Part of the [Natural Resources Management and Policy Commons](#), and the [Oceanography and Atmospheric Sciences and Meteorology Commons](#)

---

## Recommended Citation

Brillat, Thomas H., "A National Approach for Marine Scientific Research in Exclusive Economic Zones" (1978). *Theses and Major Papers*. Paper 29.

This Thesis is brought to you for free and open access by the Marine Affairs at DigitalCommons@URI. It has been accepted for inclusion in Theses and Major Papers by an authorized administrator of DigitalCommons@URI. For more information, please contact [digitalcommons@etal.uri.edu](mailto:digitalcommons@etal.uri.edu).

A NATIONAL APPROACH FOR  
MARINE SCIENTIFIC RESEARCH  
IN  
EXCLUSIVE ECONOMIC ZONES  
BY  
THOMAS H. BRILLAT

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF  
MASTER OF ARTS  
IN  
MARINE AFFAIRS

UNIVERSITY OF RHODE ISLAND

1978



MASTER OF ARTS THESIS

OF

THOMAS H. BRILLAT

Approved:

Thesis Committee

Major Professor

Dennis W. Nylan

James M. O'Connell

G. Ross Heath

A. G. Michel

Dean of the Graduate School

UNIVERSITY OF RHODE ISLAND

1978

## ABSTRACT

After years of constant negotiations at the Third United Nations Conference on the Law of the Sea (UNCLOS III), no new codified law for the seas has been produced. It appears certain, though, that countries throughout the world will exercise some form of sovereignty or national jurisdiction over an Exclusive Economic Zone (EEZ) extending 188 miles into the ocean beyond a twelve mile territorial sea. Included in this jurisdiction will be the control of marine scientific research (MSR). A need has arisen to establish a uniform procedure for the conduct of MSR to the mutual advantages of the coastal state, the researching state and the international community-at-large.

Obstacles in the path of forming a valid procedure for MSR in coastal state EEZs have to be overcome before any success can be realized. The lack of recognition of coastal state rights over MSR by the United States (US) State Department is a paramount "red tape" problem for US scientists. Distinctions between "fundamental" and "applied" research have yet to be agreed upon. A certain amount of trust has to develop within each Less Developed Country (LDC) towards the developed States and a means for equitable international economic growth is required.

The US could help solve these problems by creating a uniform national approach for MSR. This would either be in place of a comprehensive UNCLOS treaty or used as a transitional agreement until a successful UNCLOS treaty goes into force.

To form such a policy it is necessary to receive input from all parties who would be directly affected by that policy. Input was received via questionnaires sent to noted oceanographers, government agencies, international organizations and the countries attending UNCLOS III. Pertinent personal interviews were also conducted. The library facilities of the United Nations, Woods Hole Oceanographic Institution and the University of Rhode Island were also significant sources of information.

The results of this research indicate that a National Policy should be adopted by the US for the conduct of MSR in the EEZs of coastal states. The problems faced by oceanographers and the development of the US and LDC positions at the UNCLOS talks were very influential in policy development. It is concluded that the US should: commit itself to equalizing world economic growth; organize programs of assistance to LDCs; form a national oceanographic control organization; and demand LDC commitment for proper management of MSR and the marine environment.

## ACKNOWLEDGEMENTS

I wish to express my thanks to the faculty and staff of the University of Rhode Island and the Woods Hole Oceanographic Institution for their patience and interest in my work. Also, I want to thank those individuals at the National Academy of Sciences, the National Science Foundation, the United States State Department and the United Nations Office on the Law of the Sea, who gave me so much of their time and were very informative.

Particularly, I am grateful to Dr. John A Knauss, Dr. Lewis M. Alexander and Mr. Dennis Nixon of the University of Rhode Island, without whom this project could not have been completed.

Finally, special thanks must go to my wife, Susan, for her constant understanding and encouragement.

University of Rhode Island  
April, 1978

Thomas H. Brillat

## TABLE OF CONTENTS

CHAPTER	PAGE
INTRODUCTION.....	1
Notes.....	4
I.    CURRENT PROBLEMS OF CONDUCTING MSR.....	5
Primary Reasons for Denying Access.....	5
Military Security.....	6
Bureaucratic Delays.....	7
Political or Special Cases.....	7
Concern Over Resource Exploitation..	9
Secondary Reasons for Denying Access...	10
Lack of US Interest.....	10
Insufficient LDC Infrastructure.....	11
Incorrect Information.....	12
Insufficient Financial Aid.....	12
Competition Among Scientists.....	13
Notes.....	15
II.   DEVELOPMENT OF THE US POSITION.....	17
The Truman Proclamation.....	17
The 1958 Geneva Conventions.....	18
Common Heritage Concept.....	19
Effects on the US UNCLOS Position.....	20
Unilateral Actions.....	21
Naval Influence.....	22
Naval-MSR Relationship.....	23
Scientists v. The State Department..	24

## CHAPTER

## PAGE

	Developed Country Oceanographers....	25
	Insufficient MSR Voice in Washington	25
	Position of the US Oceanographers...	26
	Business Interests.....	27
	State Department Position.....	28
	National Marine Interests.....	29
	Notes.....	30
III.	DEVELOPMENT OF THE LDC POSITION.....	32
	Colonialism.....	32
	LDC Factions.....	34
	The Group of 77.....	35
	Latin American Nations.....	35
	African and Asian Nations.....	38
	Land-Locked and Geographically Disadvantaged Nations.....	40
	LDC Interest and Capability in MSR....	41
	Technology Transfer.....	44
	Perception Problems.....	48
	No Opposition to the LDCs.....	49
	Notes.....	52
IV.	DEVELOPMENT OF THE MSR SECTION OF THE ICNT.....	55
	Purpose of Committee III.....	56
	Division of the MSR Articles.....	56
	General Provisions.....	57
	Global and Regional Cooperation.....	57



	vii
CHAPTER	PAGE
Conduct and Promotion of Marine Scientific Research.....	58
The Other MSR Sections.....	66
Notes.....	68
V. ALTERNATIVES TO UNCLOS.....	70
Fundamental v. Applied Research.....	71
Plans for MSR.....	73
Separate MSR Convention.....	73
International Organizations.....	74
Regional Arrangements.....	79
Bilateral Agreements.....	81
Non-Observance of Special Maritime Jurisdiction.....	82
Notes.....	83
VI. A NATIONAL POLICY FOR MSR.....	86
A National Policy.....	86
Components of a National Policy.....	89
Section 1. US State Department.....	91
Section 2. US Objectives in MSR....	92
Section 3. Centralized MSR Control Organization.....	95
Section 4. Standards and Obligations for Concluding Treaties Covering MSR in Coastal State EEZs.....	96
Notes.....	101
SUMMARY.....	102
APPENDIX.....	105
BIBLIOGRAPHY.....	112

## INTRODUCTION

After six sessions of the Third United Nations Conference on the Law of the Sea (UNCLOS III) it is apparent that one of the primary ocean interests of the United States (US) has not been preserved. The interests of the US marine science community were negotiated away, in order to preserve untested US commercial interests in the deep ocean and the US Navy's ability to navigate as freely as possible. The negotiators' concern for these factors and the loss of Soviet Union support for freedom of marine scientific research (MSR) in all waters has left the US scientists battered. US oceanographers are now faced with adapting to research conditions and requirements that indicate freedom of scientific research is not a guaranteed right.

The failure of the UNCLOS talks is now a real possibility. An urgent need has arisen in the US for a standardized procedure for the conduct of MSR in the Exclusive Economic Zone (EEZ) of coastal states. The requirements of all nations for efficient and informative MSR increase daily. The universal need for this data is generally recognized, yet the methods and the who, what, when and where questions are the centerpieces for debate between the developing and the developed countries.



These differences may be resolved by bilateral, multilateral, regional or global agreements. It has been suggested that all marine science be placed under one separate convention<sup>-1</sup> outside of the present Law of the Sea (LOS) discussions. The withdrawal of MSR from the LOS talks does not appear to be a reasonable solution on its own. Science is interwoven in all the UNCLOS Committees. It forms the basis for a large portion of the disagreements found in the Informal Composite Negotiating Text (ICNT) and in the previous LOS Negotiating Texts. To continue without any action also seems to be the wrong road to follow. The stagnation of the Conference and the continued problems faced by scientists today, would indicate at least some measures need to be taken. These measures would help maintain active MSR and encourage the trust that is needed to permit all nations to progress with MSR.

The large portion of the ocean to be enclosed by national claims of an EEZ are also those areas of the ocean where the greatest amount of MSR is conducted.<sup>-2</sup> With the establishment of a consent regime for MSR in these regions the coastal state could control the acquisition of data that may be pertinent to its economic growth or national security. This "power" over the developed world has apparently helped buoy the already strong nationalistic feelings of many of the LDCs.

The development of a stable US national policy for conducting international MSR in the EEZ of a coastal state, whether in place of a comprehensive UNCLOS treaty or as a transitional agreement, would help solve many existing problems. The conflicts of the deep seabed would be of no concern to EEZ policy matters. Specifics could be organized to protect the resource interests of the coastal states and simultaneously provide increased access to the EEZ for US scientists.

The development of a National Policy for MSR must include: an analysis of the growth of the positions of both the North (developed countries) and the South (LDCs) in reference to MSR and the ICNT; an understanding of the current problems faced by oceanographers attempting to conduct MSR; and an indication of alternatives to the existing methods of international MSR. From these analyses a better understanding of why a national policy is needed and how it can be formulated is achieved.

NOTES

<sup>1</sup>Jonathan R. Moore, "The Future of Scientific Research in Contiguous Resource Zones: Legal Aspects," International Lawyer, vol. 8, no. 2 (April, 1974), 252.

<sup>2</sup>Nicholas Raymond, "Sea Law: The Unpleasant Options," Ocean World, vol. 1, no. 1 (January, 1978), 12. The importance of the EEZ is not questioned by any oceanographers.

# I

## CURRENT PROBLEMS OF CONDUCTING MSR

"In the past year UNOLS records indicate that about half of the scheduled cruises for work in waters over which other nations claim control have been cancelled because requests were denied, or have been hindered sufficiently to prevent the cruise from taking place."-1

Such evidence is used by the US scientific community to convince negotiators at UNCLOS that MSR is rapidly coming under the tightening control of coastal nations. Scientists and research institutions have pointed out again and again to the US State Department that an extremely severe strain is being placed on the budgets of their respective organizations. The increasing demands of coastal states for involvement in all aspects of a research project and bureaucratic "red tape" delays are primary reasons. Such a strain can effectively reduce the amount and quality of research cruises, hindering the possible benefits to mankind from the research.

### I. PRIMARY REASONS FOR DENYING ACCESS

In a major study conducted by Scripps Institute of Oceanography between 1971 and 1973, Judith Kildow identified four primary reasons as the bases for coastal state refusal to conduct MSR in their waters. These are: 1) military security; 2) bureaucratic delays; 3) concern over resource exploitation; and 4) political or special

cases.<sup>-2</sup> These four reasons were affected by political influences and other secondary factors in all cases.

The broad unilateral extensions of marine jurisdiction by many states have been used to restrict the activities of research institutions desirous of doing MSR in these regions. These demands are not all new. Yet, as more and more countries enforce their demands, and as they become more complex, the costs increase for the researcher. These broad restrictions are frequently linked directly to the causes of MSR refusal by the coastal states.

#### Military Security

The first, and most often cited reason for MSR refusal is military security. The Soviet Union is notorious for using this reason to deny access to their waters,<sup>-3</sup> but many countries use it. In 1969 the research vessel (R/V) Thompson of the University of Washington sought permission to conduct geological and geophysical research in Turkish territorial waters in the Black Sea. Permission was denied and work had to be accomplished outside the preferred study area.<sup>-4</sup> Also that same year, the R/V Pillsbury of the University of Miami was granted permission by Haiti to conduct a marine biology research program on Haiti's continental shelf and the adjacent waters. Permission was later denied for fear of invasion.<sup>-5</sup>

### Bureaucratic Delays

Bureaucratic delays by the US and coastal states hamper research efforts. The poor flow of communications and information within the clearance systems of the researching state and the host country cause these delays. In 1970 the R/V Alaminos of Texas A & M University was refused access to Mexican waters to do physical oceanography because of insufficient notice.<sup>-6</sup> It is not clear who is to blame for this denial. The US may not have forwarded the request soon enough, or the Mexicans may have lost it in their routing procedures. Unfortunately, it did not matter who was to blame. The MSR did not occur, and that is the problem.

### Political or Special Cases

The US State Department plays a major role in preventing MSR. It has a growing labyrinth of rules and regulations that need to be followed by an organization planning to do research in waters claimed by other states. The current US policies of not recognizing foreign maritime zones and requesting R/V clearances through the State Department are examples of official US impediments to research.<sup>-7</sup>

Such impediments are caused by official US requests to conduct research within the territorial sea of a state, regardless if the researching institution only wants to work in waters beyond the territorial sea.



Therefore, any research that is being conducted at this time in a claimed jurisdictional zone of any coastal state is hampered by this consent procedure. Subsequently, extraneous research is required within the territorial sea. In 1970 the R/V Atlantis II of Woods Hole requested the State Department to seek Argentine approval of a benthic biological study to be conducted in an area not less than three miles and not greater than 200 miles from the Argentine coast. The State Department would not make the request and Woods Hole had to make private arrangements.<sup>-8</sup> Such problems could be avoided entirely if the US would recognize the special zones.

Special cases that hamper research are all other problem areas. A common example is the Burmese policy of not granting entry to their waters by the R/Vs of any country. The US tested this policy in 1971 when the R/V Melville was denied entry to Burmese waters as a matter of routine policy.<sup>-9</sup>

"The academic marine science community finds itself in a different and somewhat isolated position vis a vis other US interests. While it is often financially supported by business and the Navy, it pursues a distinct policy on access to coastal waters. The academic scientific community shares the intelligence community's preference for freedom of access to near shore areas, but it breaks with that group in its support for a special right of access for research intended for open publication, as opposed to all other research...Most segments of the academic marine scientific community

lack the capability and therefore the willingness...to negotiate arrangements that offer access to coastal state areas in exchange for some benefits...for the most part, academic marine scientists are dependent upon the State Department to facilitate arrangements for research off the coasts of other countries."-10

It can be seen that the researching institutions are guided by the diplomatic hands of the State Department. The researcher functions via the standard procedures adopted by the US government. Even if the State Department procedures are followed, funding connections with the Navy and big business cause delays and skepticism in coastal states.

#### Concern Over Resource Exploitation

Historically, actions by President Truman in the 1940s,<sup>-11</sup> and by Congress in the 1970s,<sup>-12</sup> have enlarged the jurisdictional powers of the US in the oceans off its coasts. These encroachments of Grotian principles of freedom of the seas by the US were sufficient to justify myriad reactions by many nations. These countries have increased their claims off their coasts, including control over scientific research. Meanwhile, the US government has continued to pursue a policy of non-recognition of some special jurisdictional zones.

A paramount reason given by many nations for their extended claims is also used by coastal states to deny access to these extended claim areas. This is the coastal state's desire to control and protect the resources



of these regions. Such a claim has long formed the basis of several Latin American maritime zones. This reason has also been used by developed nations as well. In 1971 the US R/V Melville and a Soviet R/V were both denied access to French waters off the Comoro Islands. Both nations wanted to conduct research on the "living fossil" Coelacanth, a rare nautical species found only in those waters.<sup>-13</sup>

## II. SECONDARY REASONS FOR DENYING ACCESS

### Lack of US Interest

An important secondary hindrance to MSR is the lack of personal interest in the problems of the coastal states by the researching scientists. This impartiality with respect to the host country has put a blot on scientists who claim to be doing research for the benefit of all mankind.

The high technology involved in modern oceanography has developed a specialized class of research scientist in comparison to his counterpart in the developing world. These

"elite ocean scientists are insulated from the vision of responsibility now being advocated by technologically less developed nations in the demand for participation in ocean research ...it is very likely that world economic progress would be retarded considerably if all ocean science were to cease. But it would probably be difficult to demonstrate empirically that a state or anyone, except ocean-

ographers, is hurt or deprived of much if a particular marine study is not conducted."-14

Because of the dichotomy of interests between the researchers and the host countries, few projects of importance to anyone will continue unless oceanographers from the researching states are willing to help the coastal state. This willingness to assist the coastal state cannot come from granting a scholarship to a few students in US universities. Teaching overseas and conducting research of local interest are not necessarily career enhancing to the technologically advanced scientist, but they are essential to the growth of the LDCs. Poor researching conditions, insufficient equipment and the lack of centrally located topics for study are also hazards to overseas assignments. Therefore many scientists reject the idea of devoting personal time to work and teach in countries whose waters they wish to study.-15

#### Insufficient LDC Infrastructure

It appears, though, to most scientists in the US and to those of the LDCs, that a desire and an obvious need exist for developing a MSR infrastructure within each developing country.-16 Problems result from this need because an infrastructure takes years to formulate. LDCs are not looking for solutions to future problems, they are demanding the answers to immediate needs.

Therefore, "assistance programs are most effective if they are in response to clearly understood national needs expressed by the developing country."<sup>-17</sup> In response to this attitude the scientific community of the developed world faces many social hurdles. They must understand fundamental cultural aspects of the developing countries, prior to conducting any MSR off the coasts of these countries.

#### Incorrect Information

The acts of such US ships as the Glomar Explorer and the Pueblo have done little to instill confidence in the coastal state that the presence of a US oceanographic vessel in waters they consider theirs, will be beneficial to anyone except the US.

#### Insufficient Financial Aid

The situation is harried further by the miniscule contributions of US government agencies for marine science development in LDCs and the continued level funding of existing US MSR programs.<sup>-18</sup> Little aid, financially or otherwise, is budgeted for marine science and technology assistance to the LDCs.<sup>-19</sup> "The aggregate of these programs and those sponsored by other US agencies and by other developed countries reaches the barely non-trivial level on a global scale."<sup>-20</sup> This lack of formal US government support for

significant assistance to LDCs' marine science programs has enhanced the LDC contentions that the gap is widening between the haves and the have-nots. -21

#### Competition Among Scientists

A final factor that detracts from the successful conduct of MSR at the present time is the lack of cooperation within the scientific communities. Competition among scientists of the world and the lack of knowledge of what other researchers are studying, has created redundancy in some research efforts. The University-National Oceanographic Laboratory System (UNOLS) established several years ago at Woods Hole Oceanographic Institute may be able to reduce redundant research by US organizations through increased communications and control over oceanographic cruises.

UNOLS is compiling data on the problems faced by researching institutions and R/Vs doing MSR in special jurisdictional zones of coastal states. Much of this data is highly sensitive and has not been reviewed for publication. Collection of this data has been difficult and in the past, not very accurate. It is difficult to estimate how much MSR is cancelled, avoided or hampered by the primary and secondary reasons mentioned previously. Many scientists are not applying to trouble spots any longer and some may even be entering

coastal waters without permission.<sup>-22</sup> These facts reduce the accuracy of the data on hand for review of MSR refusals.

According to the US scientists, the physical problems of conducting research at the present time are increasing. An increase in paperwork and procedural requirements has also resulted from US unilateral actions that set off an international chain reaction. Countries are now claiming jurisdiction over different segments of the waters off their coasts for a multitude of reasons, including MSR. The US State Department's own policies for R/V clearance is time consuming and limiting.

Similarly, many developing coastal states do not wish to allow US institutions or the US government to make any agreement that may smack of colonialism, or be negotiated in bad faith. The internal lack of LDC MSR development and the combined lack of real commitment by the US to provide MSR assistance foster the eternal problem of social mistrust. Overcoming these obstacles will not be easy, and may not even be worthwhile.



## NOTES

<sup>1</sup> Ocean Policy Committee of the National Academy of Sciences, "The Marine Scientific Research Issue in the Law of the Sea Negotiations," Science, July, 15, 1977, p. 232.

<sup>2</sup> Judith A. Tegger Kildow, "Nature of the Present Restrictions on Oceanic Research," in Freedom of Oceanic Research, ed. by Warren S. Wooster (New York: Crane, Russak & Co., Inc., 1973), p. 14.

<sup>3</sup> Ibid.

<sup>4</sup> Ibid., pp. 5-28.

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

<sup>7</sup> U.S. Department of Commerce, National Technical Information Service, Proceedings of a Workshop on Problems of Scientific Research in the United Nations Third Law of the Sea Conference, for the National Science Foundation, Division of Ocean Sciences and the National Academy of Sciences, Ocean Policy Committee (Washington, D.C.: Government Printing Office, 1976), p. 4.

<sup>8</sup> Kildow, "Restrictions on Oceanic Research," pp. 5-28.

<sup>9</sup> Ibid.

<sup>10</sup> Robert Osgood, et al., Toward a National Ocean Policy (Baltimore: The Johns Hopkins University Press, 1975), p. 180.

<sup>11</sup> Presidential Proclamation No. 2667, Concerning the Policy of the United States with Respect to the Natural Resources of the Subsoil and Seabed of the Continental Shelf, 59 Stat. 884 (1945).

<sup>12</sup> The Fishery Conservation and Management Act of 1976, PL 94-265.

and

The Federal Water Pollution Control Act Amendments of 1977, PL 95-217.

<sup>13</sup> Kildow, "Restrictions on Oceanic Research," pp. 5-28.

<sup>14</sup>H. Russell Bernard, "Restrictions on Oceanic Research: An Anthropologists View," in The Law of the Sea Institute Seventh Annual Proceedings, ed. by Lewis M. Alexander (Kingston, Rhode Island: LOS Institute, University of Rhode Island, 1972), p. 208.

<sup>15</sup>H. Russell Bernard and Peter D. Killworth, "Scientists as Others See Them," Ocean Development and International Law, vol. 4, no. 3 (1977), 263.

<sup>16</sup>H.B. Stewart, Jr., "The Bologna Workshop on Marine Science," in United States Marine Science Research Assistance to Foreign States: Proceedings of a Conference, by the Ocean Affairs Board of the National Academy of Sciences (Washington, D.C.: NAS, 1974), pp. 241-247.

and

J.W. Winchester, "The Needs and Interests of Developing Countries in Marine Scientific Research Assistance," in US MSR Assistance, p. 7.

<sup>17</sup>Winchester, Ibid, p. 6.

<sup>18</sup>Mary Hope Katsoras, private interview at the National Academy of Sciences, Washington, D.C., October, 1977.

<sup>19</sup>Stewart, "Bologna Workshop," pp. 13-15.

<sup>20</sup>Louis Brown, "Marine Science Assistance Programs within the National Science Foundation," in US MSR Assistance, p. 199.

<sup>21</sup>William T. Burke, "Technical Assistance in Marine Sciences," in US MSR Assistance, pp. 41-46.

<sup>22</sup>Kildow, "Restrictions on Oceanic Research," p. 22.

## II

### DEVELOPMENT OF THE US POSITION

#### I. THE TRUMAN PROCLAMATION

As long as man has been studying the sea, he has had little opposition to his research. On September 28, 1945 the history of marine scientific research changed dramatically. President Truman extended US rights over the resources of the seabed and subsoil of the continental shelf.<sup>-1</sup> He was careful to avoid any implication that the US claimed jurisdiction or sovereign rights to the water column or seabed itself, but the damage was done.

The US had become the initiator of an international scramble for larger national maritime zones.<sup>-2</sup> The 1940s and 1950s saw the unilateral claims of the Latin American countries, and then the early 1970s saw similar extensions by the newly independent African and Asian nations. (See Appendix One) These claims took various forms, but the indication was clear that coastal states were taking more and more authority in waters previously considered high seas by the US.

It is possible, even probable, that the unilateral extensions would have occurred without the Truman Proclamation. At least two South American countries were interested in protecting their whaling and fishing industries prior to 1945.<sup>-3</sup> The US action supplied them



with a fortuitous precedent to support their actions.

## II. THE 1958 GENEVA CONVENTIONS

In 1958 the signatories of the Geneva Convention on the Continental Shelf took the next step for legally extending coastal state rights in the oceans. Article One of the Convention defined "continental shelf" as,

"referring to the seabed and subsoil of the submarine areas adjacent to the coast but outside the area of the territorial sea, to a depth of 200 meters or, beyond that limit, to where the depth of the superadjacent waters admits to the exploitation of the natural resources of the said area."

Other articles in the Convention gave the coastal state exclusive sovereign rights for exploration and exploitation of the natural resources of the shelf.<sup>-4</sup>

The Convention apparently preserved the right of researchers to conduct fundamental oceanographic research as well.<sup>-5</sup> The consent of the coastal state became

mandatory, though, for doing MSR on the shelf. This was balanced by the fact that the coastal state would not normally withhold its consent.<sup>-6</sup> These new international guidelines and the absence of a specific guarantee for freedom of scientific research in the Convention on the High Seas, legally placed MSR under a certain degree of control by the coastal state. This was very important to the future development of MSR.

Following the 1958 Law of the Sea Conference in Geneva a second conference was held in 1960 to try and work out the ambiguities of the 1958 Conventions. Interest was focused on establishing a uniform breadth of the territorial sea and exclusive fishing zones. The second conference was a futile effort and the 1958 Conventions are still the governing international law for the sea.

### III. COMMON HERITAGE CONCEPT

Many new nations emerged on the world political scene in the 1960s. Colonialism was dying and as these new countries gained their freedom they sought membership in the United Nations (UN). A delegate from one of these former colonies introduced to the world a new philosophy for the control and use of the world's oceans.

Arvid Pardo of Malta made a speech to the UN General Assembly in 1967 proclaiming that the oceans and their resources were the "common heritage of mankind".<sup>-7</sup> Most importantly, was the fact that the resources of the high seas should be shared by all nations to their mutual benefit. The developing and newly independent countries were quick to support this proposal and philosophy, and continue to do so.

As long as the US remained the strongest country

in the world, could proceed with research efforts as before and there were no imminent economic gains to be made from the resources of the high seas, it pursued a soft acceptance of the common heritage concept. It was clear that the common heritage area did not include the continental shelf, and therefore there was no significant threat to the booming US oil industry.

The control over the shelf was disputed by the Department of the Interior and the State Department. The State Department observed the customary law in this area, by preserving the 200 meter isobath as the depth within which consent would be mandatory. The Interior Department preferred a greater depth be used to guarantee US control over potential oil deposits on the shelf.<sup>-8</sup>

#### IV. EFFECTS ON THE US UNCLOS POSITION

The threat to scientific research at the time of Pardo's speech was minimal. The international opposition had not become influential on a large scale. Science was still considered open, and many of the newly independent countries desired the presence of the US researchers and businesses to help their economies prosper.

In 1966 a report by the President's Advisory Committee on Science indicated that the "national security needs for marine scientific research will be a

major force in shaping the national program for the next decade.<sup>-9</sup> Many LDCs soon realized that the US had interests of a military nature in all the waters of the world. This caused new states to more closely scrutinize MSR projects in waters near their coasts.

It was clear by 1970, then, that the time had arrived to revise the LOS as it was written in 1958. Many more countries were independent and the growth of the Third World had created a strong, significant voting bloc in the UN.

President Nixon made a general policy statement in 1970, announcing the US position on international affairs and the deep seabed. He also proposed a twelve mile territorial sea and an international regime for control of the resources of the seabed beyond the 200 meter isobath.<sup>-10</sup>

As a result of these factors the UN General Assembly decided to convene a Third LOS Conference in 1973. They also planned to have preparatory talks to review topics worthy of consideration at the formal Conference.

#### Unilateral Actions

The three year period between the decision to hold the Conference and when it actually convened was critical to the development of current international views on the LOS. During this period, and earlier, many countries passed unilateral legislation taking control or

assuming jurisdiction over portions of the coastal waters adjacent to their borders. (Appendix One)  
The US considered this to be in violation of the traditional freedoms of the sea.

### Naval Influence

During the early years of preliminary talks the government was heavily influenced by the Navy and the scientists. Concern for national security interests were paramount and marine science, as part of the US maritime interest, was vigorously supported.<sup>-11</sup>

The Naval influence on the US position at the pre-Conference talks and later at the sessions of UNCLOS III remained strong until the Navy was certain that they would retain all their vital navigation rights. The major missions of the Navy include: strategic deterrence; sea control; projection of power ashore; and naval presence at sea.<sup>-12</sup> To accomplish these missions on a legal international basis the Navy demanded freedom of the seas and an area of high seas as large as possible.

The Navy controlled US policy making at UNCLOS III until 1971 when business interests began to make the Executive Departments aware of the vast bounty of treasures that may be located off the shores of the US.<sup>-13</sup>  
As the talks progressed over the years it became apparent that the idea of control over the Exclusive Economic



Zone was of great importance to coastal states and that they would trade naval navigation rights for EEZ control.<sup>-14</sup> This appeased the Navy and they have not made significant demands on the US negotiators since this concession.

#### Naval-MSR Relationship

The connection between the Navy and the marine science community is an important one in many ways. The military needs the research work conducted by some of the organizations they sponsor. The organizations need the funds to maintain their reputations and to continue with the work of investigative science. The coastal state, though, does not wish to give access to any organization that may be a threat to its national security.

In defense of the scientists the Navy indicates that its oceanography programs are overwhelmingly unclassified.<sup>-15</sup> This is because the majority of the funding the Navy offers for ocean science research is given to appropriate research institutions, universities or foundations.<sup>-16</sup> The rest of their work is conducted by their own oceanographic staff and ships. For the scientists this is no consolation. If he cannot generate the research projects that permit funding from Navy sources, his institution will be forced to decrease its international marine research component.

Generation of such projects comes from being able to convince the State Department and the host country of the peaceful nature of the work and its usefulness to mankind. Coastal states are finding it increasingly difficult to accept, or believe the fundamental character of the proposed US research projects.

#### Scientists v. The State Department

Shortly after the convening of the First Session of UNCLOS III it became obvious that the US would be divided into two distinct groups for the talks on MSR. These were the official State Department negotiators and the US ocean scientists, primarily the research scientists associated with universities or oceanographic institutions.

From 1973 until the present a small group of oceanographers have unsuccessfully attempted to have the US preserve its traditional views on freedom of scientific research, on and in the oceans of the world. The official US position remains the same as that of the scientists, but it has a very weak posture at UNCLOS.

The voting strength and world influence are now in the hands of the developing countries. Secondly, the loss of support for the US position by the Soviet Union and most of Western Europe destroys any bargaining

power the US possesses on this issue. To the scientists it appears that they have been used as the carrot for protecting other US interests in the LOS. This is probably true, and justifiable according to the priorities set by most nations of the world.

#### Developed Country Oceanographers

Scientists in the developed countries have careers based on two primary axioms. The first is that all scientists are dependent on the data they collect for their income, prestige and livelihood. Secondly, the data that is collected is a commodity subject to ownership.<sup>-17</sup> In the field of oceanography, the second component is conditional upon the freedom of the seas for scientific research and the belief that whoever conducts that research is entitled to its benefits.

Traditionally, oceanographers have not had to concern themselves with the political problems of the world or be concerned about financial support and acceptance of their projects within and outside of the US. This is no longer the situation. They are now faced with severe competition for research funds and the LDCs' challenge to the "right of research".

#### Insufficient MSR Voice in Washington

Not having had problems in the past, the scientific community did not organize an effective lobbying group to support their position at UNCLOS or to gain



Congressional funds. In the early 1970s, and even today, the US oceanographic community has been without an effective voice in Washington. This was crucial in forming the US position on MSR at UNCLOS. It has also had a major affect on the ability of the US to convince other nations of the world that complete freedom of marine research is a necessity.

By 1972 the ocean science community was

"faced with a government willing to compromise everything to safeguard security; a lack of access to policy-making; and other better organized special interests willing to compromise scientific research."-18

Throughout the negotiations that followed, this predicament was obvious.

#### Position of the US Oceanographers

A proposed position statement of the freedom of science in the oceans, formulated by three prominent US oceanographers, Paul Fye, Warren Wooster, and John Knauss, in February 1972, was the foundation of the US entry position at the pre-Conference talks that year and later formed the original US position at Geneva in 1973. In general terms it indicated that oceanography was a universal right and that scientific research was essential to the optimum growth of the oceans for all mankind. To achieve this growth, maximum freedom to conduct open research is required. This is because the nature of the oceans and ocean processes do not

follow political boundaries.-19

Oceanographers in the US have been faced with many mountains to climb to keep the State Department on their side in the recent UNCLOS negotiations. In many respects it really did not make any difference, because the State Department often found itself up against a wall with nowhere to turn for relief, except to marine science.

The scientists were not able "to convince the US negotiators to take a tough, unequivocal stand in support of the maximum possible freedom of the seas."-20 They have been forced by the military and big business interests to yield under the pressures of LDC opposition. Yet, under these tremendously poor odds the scientists pursued their traditional policies.

#### Business Interests

In recent years a voice that has been heard with a greater influence on US MSR policy at UNCLOS than the scientists, has been that of the US mining companies. These interests and the US oil companies have carried more weight in Conference discussions than the military. They have been able to mold the US position into a quasi acceptance of the new EEZ concept and maintain the US position of freedom of mining in the deep seabed area.

State Department Position

The tacit acceptance by the US of the twelve mile territorial sea and the proposed 200 mile EEZ, would not be as embarrassing as it is, if not for the official stance against these policies.

Officials within the State Department and on the US negotiating team at UNCLOS are not sure how to handle the problem. Even Elliot Richardson, the Chief US Ambassador to the Conference, has failed to recognize the open failure of the US to preserve freedom of science on traditional high seas waters. In a speech in Cincinnati, Ohio in January 1978, he seemed to allude to the success of the US negotiating team at maintaining the freedoms of the seas within the EEZ, while giving up a few "specified resource-related rights accorded coastal states by the law." It is evident, though, that politics and appearances are reasons for not indicating the success of the LDCs. The LDCs have been victorious by gaining complete control over MSR in their EEZs.

The Ambassador made an equally confusing statement after the close of the last UNCLOS session in New York in 1977. Mr. Richardson stated that the attempt by some coastal states to increase control over scientific research in the EEZ had failed.<sup>-21</sup> This position was attacked vigorously by the oceanographic community, who believed the opposite had occurred.<sup>-22</sup>

The gap had grown between the State Department and the science community.

#### National Marine Interests

For the purposes of both the Department of State and the ocean science lobbyists the national marine interests are identical. They have been identified by Professor Lewis Alexander as: accessibility; investment; dependence; and control.<sup>-23</sup> Government officials and oceanographers both wanted to see these four areas preserved to the greatest extent. Unfortunately, the State Department received pressures in other area of the LOS talks that mandated capitulation on some of the national marine interests. This action clearly supports a remark made by the University of Rhode Island's Provost for Marine Affairs, Dr. John Knauss, that "in any ordering of national priorities concerning LOS issues the problems of scientific research cannot be expected to rank near the top."<sup>-24</sup> If this is true in the United States, the conditions in LOCs must be worse.

## NOTES

<sup>1</sup>See Chapter One, Note 11.

<sup>2</sup>Mark W. Janis, Sea Power and the Law of the Sea (Lexington, Mass: D.C. Heath & Co., 1976), p. xiii.

<sup>3</sup>Ann L. Hollick, "Notes and Comments: The Origins of 200-Mile Offshore Zones," American Journal of International Law, vol. 71, no. 3 (1977), 495-499.

<sup>4</sup>Convention on the Continental Shelf, 15 U.S.T. 471, Article 2, paragraphs 1 & 2.

<sup>5</sup>Ibid, Article 5, paragraph 1.

<sup>6</sup>Ibid, Article 5, paragraph 8.

<sup>7</sup>Lewis M. Alexander, Dennis Nixon and Francis X. Cameron, "The Costs of Failure at the Third Law of the Sea Conference," Journal of Maritime Law and Commerce, vol. 9, no. 1 (1977), 2.

<sup>8</sup>William T. Burke, International Legal Problems of Scientific Research in the Oceans (Columbus, Ohio: Ohio State University Press, 1967), p. 57.

<sup>9</sup>President's Science Advisory Committee, Panel on Oceanography, Effective Use of the Sea: A Report, June, 1966, p. 17.

<sup>10</sup>President Richard M. Nixon, "United States Policy for the Seabed," 62 State Department Bulletin, 737 (1970) in The Law of the Sea: Cases, Documents and Readings, by H. Gary Knight (Washington, D.C.: Nautilus Press, 1976-1977), p. 849.

<sup>11</sup>Comptroller General of the United States, "Information on US Ocean Interests together with Positions and Results of the Law of the Sea Conference at Caracas," March, 1975, pp.5-6, in LOS: Cases and Readings, by Knight, pp. 867-871.

and

The Marine Resources and Engineering Development Act of 1966, PL 89-454.

<sup>12</sup>Janis, Sea Power and the LOS, p. 1.

<sup>13</sup>Ibid, p. 10.



<sup>14</sup>Ibid, p. 20.

<sup>15</sup>A. Denis Clift, Defense Interests and the National Oceanographic Commission (Washington, D.C.: Government Printing Office, 1969), p. 14.

<sup>16</sup>Ibid.

<sup>17</sup>Bernard, "An Anthropologists View," p. 206.

<sup>18</sup>Richard Munier, "Politics of Marine Science: Crisis and Compromise," in the LOS Institute 7th Annual Proceedings, p. 219.

<sup>19</sup>Paul Fye, Warren Wooster, John Knauss, "Proposed United States Position on the Question of Freedom for Science in the Oceans," February, 1972. From the private files of Dr. John A. Knauss.

<sup>20</sup>Lauriston R. King, Oceanographers, Political Intelligence and Freedom of Ocean Research (Woods Hole: WHOI, July 1972), p. 5.

<sup>21</sup>Ocean Science News, August 1, 1977.

<sup>22</sup>William T. Burke, comments in Ocean Science News, September 12, 1977. Letters from Warren Wooster to Dr. Frank Ross, The White House Science Advisor, August 23, 1977; W.T. Burke to Senator Magnuson, August 17, 1977; and John Norton Moore of the University of Virginia, to Ambassador Richardson, October 26, 1977. All letters from the private files of Dr. John A. Knauss.

<sup>23</sup>Lewis M. Alexander, "Indices of National Interest in the Oceans," Ocean Development and International Law, vol. 1, no. 1 (1973), 21.

<sup>24</sup>John A Knauss, "Developing the Freedom of Scientific Research Issue at the Law of the Sea Conference," May 4, 1972, from his private files.

### III

#### DEVELOPMENT OF THE LDC POSITION

The LDC representatives at UNCLOS are not subject to the same influences that are exerted on the US delegates by an internal MSR community. It is true that a number of the developing countries, notably Brazil, Mexico, India and a few others, are rapidly developing their own internal oceanographic expertise. The vast number of newly independent nations, and those older nations that have not kept pace technologically with the US, are not as fortunate. This lack of knowledge of science and the historical development of these countries must be understood to appreciate their positions at the bargaining tables of UNCLOS.

The majority of countries in the world have gained their independence since the close of World War II, and nearly 70% of these since 1960, (Appendix One). These facts are important, realizing that it takes many years for a country to prove to the world its respectability on the world political and economic scales. What is more important is the relationship these ex-colonies held previously with the other countries of the world.

#### I. COLONIALISM

Colonialism was a way of life for centuries in some of today's new nations. It left an imprint that may

never disappear. This imprint is being felt today by the marine science interests of the developed nations at the LOS Conference.

"Before the principle of self-determination became prevalent in the realm of international law, not only had the rules of international law not condemned the open and clandestine forms of colonial oppression, but so-called traditional international law, which had evolved from the very practise of the colonial powers and served their interests, effectively recognized the right of colonization just as the right of States to make war."-1

The colonial subjects saw the large powers of the world make the law to suit their own purposes and positions. In a like sense, the new nations of the world now have the opportunity to create the law for THEIR needs and purposes and consider "traditional law" not necessarily binding. This was first apparent at the early LOS Conferences in 1958 and 1960. There, the newly independent states that attended the Conferences accepted rules of international law that expressed universal interests, but considered the three mile limit of territorial sea as a colonialistic policy.<sup>-2</sup> These new countries generally favor any "existing rules of international law which promotes their national interests and reject or modify others which are obstructive to the furtherance of their interests."<sup>-3</sup> For this reason the breadth of the new coastal states' territorial seas have varied according to their view of its

importance in their future.

"It can no longer be expected of the customary rules created by the older States to correspond to the interests of the new ones. Under such circumstances, the thesis that the State's will is the source of the customary rules of international law has an increased significance. On the one hand, it means that every new State has the right to express its view on the application of customary rules; on the other hand, since some of the customary norms of traditional international law reflect the interests of the imperialist and colonial powers, it is today more probable than in the past that a new State will oppose the application of some pre-existing customary rules. Thus the customary rules of international law are not applicable to the new State against its will."-4

The preceding ideas form a foundation for understanding some of the reasoning behind the actions of the LDCs and how they developed their positions on international marine scientific research.

## II. LDC FACTIONS

Analogous to the US, the LDCs can be divided into groups with different points of view. There are three prominent groups. They are the Latin American countries, African and Asian nations and a combination of nations, the land-locked and geographically disadvantaged (LL-GDS). The third group is also comprised of a number of highly advanced countries. The views of these groups on coastal state rights range from having as narrow a territorial sea as possible, to having one 200 miles wide or greater. They all feel though,

that control over MSR is essential.<sup>-5</sup> This presents problems to the unification of the developing countries in other parts of the LOS negotiations, but maintains their solidarity in Committee Three work on MSR.

#### The Group of 77

The Group of 77, an organization originally composed of 77 LDC members of UNCLOS, has played a vital role at the talks. Now numbering over 100 members it is regarded as the majority voice of the LDCs in UNCLOS. The Group has had a significant influence in forming the MSR articles of the various draft texts compiled by the negotiators during the past several years.

#### Latin American Nations

Similar national needs and geographic features caused the different factions within the LDC countries. The earliest development came in Latin America in the late 1940s. Several countries in this area made unilateral claims extending their jurisdiction far out into the waters off their coasts.<sup>-6</sup>

They defended their actions, primarily fisheries jurisdiction claims, on the basis of the Truman Proclamation, the Declaration of Panama,<sup>-7</sup> and that management of these regions was vital to the welfare of their people. It was further argued that "offshore zones



had to be extensive in order to match the range of interdependent species within the 'ecosystems' or 'biomass' adjacent to the shore."<sup>-8</sup> Also, the countries on the Pacific coast of South America complained that they deserved some form of compensation because of their narrow continental shelf. At a meeting in Mexico City in 1956 the Pan American Union approved a resolution, with the US dissenting. It stated that each state is competent to establish its own territorial waters within reasonable limits.<sup>-9</sup>

In 1958 Peru presented a proposal to the delegates of the First LOS Conference in Geneva. It called for resource protection, environment-orientation, ecology development and concern in the waters off the coasts of states.<sup>-10</sup> The proposal met with little acceptance and was actually feared by some of the traditional sea powers as an underhanded method of encroaching on the freedoms of the sea. Ultimately, in Lima in 1970, the majority of Latin American countries formalized their views on the powers and rights of a coastal state in the waters adjacent to its shores. In a formal resolution they concluded:

- 1) Scientific research activity in the ocean requires widest possible cooperation among States;
- 2) The coastal state has the right to authorize any type of oceanography activity conducted

in the adjacent sea under its sovereignty or jurisdiction;

- 3) The littoral state has the right to supervise all scientific research in the area of marine environment under its sovereignty or jurisdiction; and
- 4) The coastal state has the right to participate in all scientific research that is to be carried out in any maritime jurisdictional areas.-11

This resolution is similar to the beliefs and reasoning that supported the 1952 joint Declaration on the Maritime Zone of Chile, Ecuador and Peru.-12

In March 1971, Peru offered a solution for the territorial sea delimitation problem and other special maritime zones, based on the previous conclusions.

"It would be inadequate and unjust to adopt a single limit of national jurisdiction for all states, and there is no other acceptable solution but to recognize a certain plurality of regions, possibly on a regional basis."-13

Since that time, this philosophy has prevailed; if not in international theory, at least in practise. Most recently we have even seen the US continue to follow this philosophy by extending another maritime zone of its own for pollution control.-14

The Latin American countries have held subsequent meetings to discuss the problems of the LOS and other matters. At Santo Domingo in June 1972, the idea of the "patrimonial sea" was born. Mexico presented this idea as a mechanism to insure that research information was

communicated by the researchers to the appropriate officials. The concept was a means to avoid any infringement upon the traditional freedoms of the high seas, yet legally justify basic controls over resource-related activities in waters adjacent to their coast.

The Santo Domingo Conference also formalized the obligations that should be fulfilled by a researching state in an area of maritime jurisdiction of another state.<sup>-15</sup> Except for the "consent" requirement, these obligations correspond to the ones presented by the US delegation at UNCLOS prior to the first draft Negotiating Text. By the early 1970s the Latin American countries had a well established policy for control over coastal waters and had made their views well known.

#### African and Asian Nations

The situation in Africa and Asia was somewhat different. Many new countries in these areas were not only skeptical of the developed nations, but also of the ideas of some of the radical Latin Americans. The First United Nations Conference on Trade and Development (UNCTAD) in 1964 provided an initial opportunity for some of these countries to become involved in international affairs, and particularly maritime affairs. Of course, most of Africa was not independent in 1964, but those States that were, participated in a conference

which organized procedures to provide economic assistance to newly independent countries.

Finally, the advent of the Organization of African Unity (OAU) gave a regional voice to the large number of newly independent countries throughout Africa. The OAU immediately chastised the developed states for their failure to give sufficient aid to LDCs and to improve the quality of life as promised at the first three UNCTADs.<sup>-16</sup> The OAU was also concerned about the excessive interest in environmental protection displayed by the developed nations. Industrialization was the means by which many of the present developed countries became technologically competent, yet industrialization also brought environmental pollution.

The developing nations believe they should have similar opportunities. They do not understand why pollution control and natural resource monitoring should be strictly enforced to their detriment. The developed countries have advanced and become powerful by being able to progress without controls. The LDCs visualize these international controls, or pressures, as another means of dominance by the developed societies. The presence of outside controls has spurred nationalistic feelings in Africa and Asia. Coastal states have become more interested in planning their own futures.

Self-planning by African nations produced a 212

mile national economic limit of coastal state jurisdiction surrounding the entire continent.<sup>-17</sup> Compared to the functional uses of the Latin Americans' maritime zones it is a broad based multi-purpose zone-of-influence.

Early African leadership in LOS matters was held by Kenya, Tanzania and Senegal. This division of power within Africa and the lack of peaceful coexistence between many African nations, has been a complicating factor in forming a uniform African LOS policy. This may be a direct result of the colonial period. Because of the severe economic situations in many of the new countries of Africa, there has been a necessity to maintain close trade and political ties with some of the old colonial powers. This unbroken tie between the new country and the old may have repercussions affecting many aspects of LDC life and policy making. In some ways, the policies of colonialism have not ended and the new countries are still trapped in a web of obedience.

#### Land-Locked and Geographically Disadvantaged Nations

The LL-GDS countries of Africa, and those of the rest of the world, have different views on the EEZ concept than the majority of nations. They eagerly endorse narrow zones of national marine jurisdiction and a strong international control authority to divide the benefits



of the seas amongst all the needy in the world. Their outlook toward the concept of an EEZ is not one of necessity, or of equalization of rights, but of a "unilateral grabbing (of) parts of the high seas".<sup>-18</sup> In this way they concur with the view of the US, but they are equally adamant about having international control over MSR for the benefit of all mankind.<sup>-19</sup> Therefore, many US allies in the fight against broad jurisdictional zones, are actually antagonists of the US policy on the freedom of scientific research.

The leading influence on development of the African position on EEZs was Kenya's draft articles on the concept, and a regional report produced at Yaounde, Cameroon in June 1972. Both of these documents offered new ways to structure the EEZ. They base the concept on exclusive jurisdictional control or spatial extensiveness versus the functional usage of Latin America.<sup>-20</sup> For practical purposes, as far as the US science community was concerned, all the proposals were equally unacceptable. Each would allow the coastal state broad discretionary powers in deciding who and what would be permitted in 37% of the world's ocean waters.<sup>-21</sup>

### III. LDC INTEREST AND CAPABILITY IN MSR

A thorough analysis of the development of the pro-EEZ opinions of the Group of 77 and other countries leaning in their direction, also includes a look at

the countries themselves, their interest in MSR and their technical capability to conduct their own research. It is generally assumed, that LDCs, by definition, are not capable of performing the complex tasks of twentieth century oceanography. "Even where marine science research activities exist, there is a high degree of imbalance in favor of biology in the oceanographic activity of the developing world."-22

A developing nation is plagued with solving many fundamental problems to sustain its government and feed its people. The immediate life and death concerns may be an overwhelming influence that does not allow outside participation by the government in local MSR development. It may also limit the nation's ability to participate in the score of international organizations that provide little, if any, real assistance for solving internal problems. On the other hand, the overall importance of the LOS Conference to the LDCs and the potential for control over marine resources that may help solve the internal problems of their respective countrys, have caused many developing states to break away from traditional lack-of-interest policies in marine affairs. According to the Director of the Intergovernmental Oceanographic Commission (IOC),

"there is every indication that coastal states have been stimulated by the Conference of the

LOS and the number of inquiries and requests from developing coastal states for help in building up their marine science infrastructures is growing to flood proportions."-23

For many years prior to the LOS discussions, this certainly was not the case. The attendance records of pre-Conference talks held in the early 1970s indicate many of these countries simply did not attend.<sup>-24</sup> The costs of sending delegations may have been prohibitive, but more logically, they probably believed little could be gained by attending. It must also be realized that the "concerns of a country in a particular ocean-related issue may represent only an infinitesimal part of its overall national interest."<sup>-25</sup> This generation of interest within the decision making bodies of the LDCs was extremely futile, until they realized that the oceans could be used for economic gains. Today, they are playing an active part in forming new law for the oceans and they are seeking every possible benefit they can gain from this position.

The effort exerted by the developing countries in marine science is aimed at immediate economic gains. This goal, and the fact that most LDCs do not have the interest or possess the capabilities to do MSR beyond their own waters, guides the demands of these countries on foreign R/Vs in their waters. The LDCs have an insufficient number of qualified personnel who understand the different types of research. They also do not possess

the equipment needed for research. Finally, many of the trained LDC personnel are frequently performing tasks not related to their profession. It is because of these situations and others that programs in technology transfer have been developed.

#### IV. TECHNOLOGY TRANSFER

Attempts to establish a uniform solution to the technology gap between the North and the South are almost impossible. The interests and concerns of each nation varies with its geography, history and present political and economic conditions. Each country must attack its own problems head-on and in the same respect those nations providing MSR assistance or training must do so on a case by case basis.

The MSR capability of developing nations can only increase if certain conditions are met within the political body of the LDC and by the researching institution.

"The developing countries must be made to realize that any successful project must be tripartite in nature, involving government administration, institutional research and development groups and industry. Deletion of one group greatly reduces effectiveness."-26

To achieve this awareness, training and understanding are essential by both the coastal state and researcher. Realizing these goals will also require solving many problems, not necessarily noticed or thought of when contemplating assistance to an LDC. Occasionally,

receipt of US assistance by an LDC may appear demeaning or damaging to the country's image, or even possibly bordering on a form of "colonialism".<sup>-27</sup> In this same regard, the development of Western civilization and its subsequent colonialistic policies throughout the world, reinforces the do-what-I-say not-what-I-did syndrome of the developed societies. Growth for growth's sake, and the traditional conduct of research for the betterment of the home country has been the pattern of Western societies for many years.

"When you start a technology assistance program, what you're really asking the LDCs to do is to ignore the heritage of five centuries of Western expansion. This includes renouncing a basic element in their ideology; that what we do is to our advantage and not necessarily to theirs."-28

Assuming developing nations have not renounced this ideology, then it would be logical for them to assume control of research in waters off their coasts, in order to preserve their own interests. After all, developed countries would not be researching in these waters if it was not to their own advantage.

Internal development is critical for LDC success in MSR.

"The expertise that is lacking must be acquired to assume a better and proper use of the resources, to deal with foreign industrial enterprises interested in appropriate contractual arrangements to develop such resources or to enter into joint ventures in this regard, and to relate bilaterally and internationally in a more general



way regarding offshore resources. In the latter category is the need to relate in an optimum manner to the oceanographic enterprises from other countries wishing to conduct research off their shores."-29

Without forming a strong foundation within the LDC itself, any attempts by outside countries to render assistance and provide technology will only be superficial and of a brief duration. As long as a technology divergence continues, research efforts by developed states and private organizations will be hampered by culture clashes and quantum separations of economies.

As indicated earlier, the UNCTAD commitments to help the economies and quality of life of the LDC countries have not been very successful according to those countries it is supposed to benefit. The LDCs are "clamoring for a 'transfer of technology' as if technology consists of something that can be handed over in the form of a package bringing immediate affluence to the recipient."-30 This simply cannot happen. The fundamental question of whether or not technology can be transferred to LDCs from the governments and universities of the developed world has not been answered. Most of the advanced mechanics for fishing and recovery of non-living resources are controlled by a handful of multinational corporations. In a capitalistic business world, you simply do not hand over your secrets to a

potential competitor. In a socialistic business world you hand everything over.

US scientists have not decided whether or not technology transfer with LDCs is even worthwhile. According to some scholars, it is

"absolutely essential to assist the country in developing its own means of training and producing the specialists or technologically and scientifically trained people needed to maintain this new economy."-31

Others take the view that the money spent in these endeavors to help the LDCs might be better spent elsewhere.<sup>-32</sup> Whatever the solution, it seems evident that aid, in all forms, will continue to flow from the developed to the developing world, without being rejected.

The low priority placed on MSR by senior government officials and the low status of marine scientists within the LDCs also combined to prevent an influx of outside scientific help, or an internal willingness of the local population to become trained in marine science.<sup>-33</sup>

For these reasons, many developed countries are attempting to educate those people in the LDCs that make the decisions of importance on marine science. The importance of employing specially trained local citizens and developing an internal marine science program are stressed.

"The essential thing is not the training of professionals, but convincing governments of the developing nations to make adequate provisions well in advance in their policy arrangements for trained individuals to find places to fit into, where they can effectively exercise their profession."-34

## V. PERCEPTION PROBLEMS

The actions of LDCs in world politics are also affected by perceptual problems. Both the LDCs and developed states attempt to perceive how each other arrives at policy conclusions. Primary concern focuses on the issue of coastal state control in the EEZ. Unfortunately, both sides make emphatic statements interpreting how the other side thinks. These statements are assumptions upon which future decisions are made.

One US interpretation is that the

"developing states tend to regard great power, military, economic, and political interests as a multifaceted challenge to their own policies, and have reacted in opposition on each front to build a new order for the oceans and for the world economy."-35

The LDCs do not perceive their actions in this context. They believe they are acting only to protect their national interests. In this regard it is important to note that most likely it is the foreign offices of most LDCs that are demanding the strict control over MSR and not local scientists.-36

The impressions of the developing world on the attitudes and actions of the developed world can be equally damaging. This forceful statement by Paul Engo, Committee One Chairman of UNCLOS III, is a good example.

"The developed countries of the day constitute a class which have enjoyed centuries of power and glories over most of mankind...They colonized

lands and peoples. They developed a strength in their economic and social spheres on the exploitation of the resources of these...It has been difficult for these countries to accept the consequences of the radical changes that history has dictated at this point in time... Some seek to police the world in order to insure the status-quo in which durable peace must be on their terms...On the other hand, history has launched a new world of developing countries...A persisting, nagging racism, in the aftermath of neo-colonialism, mock their fragile economies with almost casual contempt. Their new needs, and these attendant threats, drive these young nations to extremes of demands. Some ask for direct redress, others seek revenge."-37

The strength of this accusation and its description of Western societies is enormous. The view of Mr. Engo may be extreme by comparison to many of his LDC colleagues, but that is of little importance. A moderate view, based on similar beliefs, would still be sufficient to justify many overt LDC actions in EEZs.

#### VI. NO OPPOSITION TO THE LDCS

One major advantage that the LDCs have in being able to achieve success on the MSR issue is the lack of any unified opposition by many technologically advanced nations. Should a unified effort of this type occur, or had it been present when the talks began, the LDC's demands may have been reduced. The effort of the maritime powers has preserved the freedom of navigation in the EEZ and, a similar unified effort may have saved MSR from coastal state control.

It has been shown that the influences on the developing world are much more fundamental to the basic needs of life than those placed on the developed world. These influences will have a major impact on developing a policy for international MSR. It has also been shown that, due to the different levels of education and the incongruities in the cultural histories of the North and the South, a universal agreement on the marine science uses of EEZs is not likely in the near future.

The seeds of mistrust are strong within the hearts of the policy makers of the LDCs. Any unauthorized research in waters that could hold future economic benefits for their country, would, in their opinion, breach their rights. The growth of the EEZ concept in Latin America and in Africa may have formed in a different manner, may be based on different reasoning, and may even have dissimilar geographic features and political consequences. For the prospects of the developed world's marine scientists, though, without a united opposition, the EEZ philosophies of the LDCs form a closed door to much of the world's oceans.

NOTE-In the first two weeks of the Seventh Session of UNCLOS III a serious problem has developed. A severe break between the views of the Latin Americans and Asians over the Presidency of the Conference has occurred.



This may significantly damage the influence and unified voting bloc of the Group of 77 in all areas of the negotiations.

## NOTES

<sup>1</sup>Hanna, Bokor-Szego, New States and International Law (Budapest: Akademiai Kiado, 1970), p. 53.

<sup>2</sup>Ibid, pp. 53-64.

<sup>3</sup>S. Prakash Sinha, New Nations and the Law of Nations (Leyden, The Netherlands: A.W. Sijthoff, 1967), p. 113.

<sup>4</sup>Bokor-Szego, New States, p. 64.

<sup>5</sup>Herman T. Franssen, "Developing Country Views of Sea Law and Marine Science," in Freedom of Oceanic Research, p. 155.

<sup>6</sup>Ann L. Hollick, "Notes and Comments," p. 495.

<sup>7</sup>Ibid.

<sup>8</sup>Douglas M. Johnston and Edgar Gold, The Economic Zone in the Law of the Sea: Survey, Analysis and Appraisal of Current Trends, The Law of the Sea Institute, Occasional Paper No. 17 (Kingston, Rhode Island: LOS Institute, University of Rhode Island, 1973), p.3.

<sup>9</sup>Pan American Union, Final Act of the Third Meeting of the Inter-American Council of Jurisdiction: Resolution XIII, in Johnston and Gold, Survey and Current Trends, p. 3.

<sup>10</sup>Johnston and Gold, Survey and Current Trends, p. 4.

<sup>11</sup>Declaration of Latin American States on the Law of the Sea, Resolution No. 5, August 1970, in Normative Aspects of Scientific Research in the Oceans, the Case of Mexico, by Jorge A. Vargas, The Law of the Sea Institute, Occasional Paper No. 23 (Kingston, Rhode Island: LOS Institute, University of Rhode Island, 1974), pp. 5-6.

<sup>12</sup>Houston S. Lay, Robin Churchill and Myron Nordquist, New Directions in the Law of the Sea, Vol. II (Dobbs Ferry, New York: Oceana Publications, Inc., 1973), Appendix.

<sup>13</sup>Arias Schreiber, "Statement of Developing Countries Reasons for Broad National Exclusive Economic Zones," in The Law of the Sea: A New Geneva Conference, Proceedings of the Sixth Annual Conference of the Law of the Sea Institute, ed. by Lewis M. Alexander (Kingston, RI: LOS Institute, 1971), pp. 5-6.

- <sup>14</sup>FWPCA 1977 Amendments, PL 95-217.
- <sup>15</sup>Santo Domingo Conference, UN Doc. A/AC 138/80.
- <sup>16</sup>Johnston and Gold, Survey and Current Trends, p.5.
- <sup>17</sup>Ibid, p. 6.
- <sup>18</sup>Letter from P.B. Dlamini for the Permanent Representative of the Kingdom of Swaziland to the United Nations, February 1, 1978.
- <sup>19</sup>Ibid.
- <sup>20</sup>Kenya Draft Articles, UN Doc. A/AC 138, SC II L10.  
and  
Yaounde Conference Report, UN Doc. A/AC 138/79.
- <sup>21</sup>John A. Knauss, "Law of the Sea Conference," in US MSR Assistance, pp. 26-31.
- <sup>22</sup>Emmanuel G. Bello, "The Present State of Marine Sciences and Oceanography in the Less Developed Countries," International Lawyer, vol. IV (June 1969), 232.
- <sup>23</sup>Desmond P.D. Scott, "Implication of the Third United Nations Conference on the Law of the Sea for Marine Scientific Research," Nature, June 30, 1977, p. 762.
- <sup>24</sup>Johnston and Gold, Survey and Current Trends, p. 30.
- <sup>25</sup>Lewis M. Alexander, "Regional Arrangements in the Oceans," Class Notes, GEG 571, University of Rhode Island, 1976, p. 13.
- <sup>26</sup>G.M. Pigott, "Problems and Difficulties of Overseas Programs at the Institutional and Governmental Levels," in US MSR Assistance, p. 181.
- <sup>27</sup>R.A. Geyer, "Overseas Experience," in US MSR Assistance, pp. 145-152.
- <sup>28</sup>G. Pontecorvo, "Social Science Concepts of Technology Transfer in Marine Science," in US MSR Assistance, p. 36.
- <sup>29</sup>Nelson Marshall and Harlan Lampe, eds., The US University Roles in Education for Marine Resources Development in the LDCs, Preliminary Report of a Workshop, November 30-December 2, 1977 (Kingston, RI: COMS, December 9, 1977), p. 3.

<sup>30</sup>Scott, "Implications of UNCLOS for MSR," p. 764.

<sup>31</sup>Bello, "The Present State in LDCs," p. 183.

and

Pigott, "Problems and Difficulties," p. 181.

<sup>32</sup>Bello, "The Present State in LDCs," p. 55.

<sup>33</sup>Olof G. Tandberg, ed., Promotion of Marine Science in Developing Countries (Stockholm: The Royal Swedish Academy of Sciences, November, 1974), p. 5.

<sup>34</sup>Milton B. Schaefer, "Freedom of Scientific Research and Exploration in the Sea," The Stanford Journal of International Studies, IV (June, 1969), 241.

<sup>35</sup>Michael A. Morris, "Have U.S. Security Interests Really Been Sacrificed?" Ocean Development and International Law, vol. 4, no. 4 (1977), 384.

<sup>36</sup>U.S. Department of Commerce, Workshop on Problems of Scientific Research, p. 3.

<sup>37</sup>Pacem in Maribus VI in Symposia of Expo '75 by The International Ocean Exposition (Okinawa, Japan, 1975), p. 30.

#### IV

#### DEVELOPMENT OF THE MSR SECTION OF THE ICNT

In order to formulate a MSR agreement that will be acceptable to as many nations as possible, it is essential to understand the evolution of the current negotiating document that has emerged from the UN Conference on the LOS. This document represents years of diplomatic bargaining by most of the countries of the world. It is the result of a Conference decision at the fifty-fifth plenary meeting on Friday April 18, 1975 to have each committee chairman of the three primary committees prepare a text covering the subjects under negotiation in his committee. These committee texts were to form a basis from which further negotiations could progress and would not represent any accepted compromises by any of the delegations.<sup>-1</sup>

Therefore in May, 1975, the Informal Single Negotiating Text (SNT) came into being. Three years and two texts later, the Conference is still without settlement. Parts of the Negotiating Texts, though, have become the basis for what may become customary international law, even without Conference ratification.<sup>-2</sup> Because of this development it is necessary to know exactly what the new or proposed law for MSR will be and how it developed.



## I. PURPOSE OF COMMITTEE III

Committee Three of the UNCLOS was assigned the task of writing the law for marine scientific research and technology transfer. In the first two negotiating texts MSR articles were also found in the First and Second Committee Texts. Some problems still exist between the First and Third Committees. It appears, though, that Committee One will be responsible for MSR activities in the deep seabed and Committee Three for all other areas. For that reason the following discussion will be based on the MSR articles mentioned in the Committee Three portion of each text.

## II. DIVISION OF THE MSR ARTICLES

Each MSR section of the SNT, the Revised SNT (RSNT) and the ICNT are all composed of six sections. These are: General Provisions; International and Regional Cooperation; Conduct and Promotion of MSR; Status of Equipment; Responsibility and Liability; and Settlement of Disputes. The major differences in the Texts are found in the sections on general provisions, conduct of MSR and dispute settlement. Even this division of importance is not as relevant as it used to be, because the center of each group of articles concerning MSR is the section on conduct.

### General Provisions

The few articles at the beginning of each section on MSR in the Texts form the broad generalities by which the nations of the world shall conduct MSR. Since the first document, the SNT, there have been no serious disagreements on the substantive issues of these articles.

All states and competent international organizations have the right to conduct MSR.<sup>-3</sup> Everyone is supposed to promote and facilitate the development and conduct of MSR.<sup>-4</sup> Four principles for conduct of MSR have been agreed upon<sup>-5</sup> and MSR activities cannot constitute the legal basis for any claims.<sup>-6</sup> The most significant difference amongst the three texts is the lack of a definition of MSR in the ICNT. The first two texts included a simple explanation of MSR.<sup>-7</sup> The elimination of a definition of MSR has left the interpretation of MSR to each individual country.

### Global and Regional Cooperation

The articles on International and Regional cooperation were even easier to agree upon than the general provisions. Each of the Texts have nearly identical wording and concern, the promotion of international cooperation, creation of favorable conditions, publication and dissemination of information and knowledge.<sup>-8</sup>

The underlying principles of the UN and the ultimate purpose of MSR are concepts which are universally accepted. They are encompassed within the words of these articles.

#### Conduct and Promotion of Marine Scientific Research

Within the next several articles of each Text is the heart of the MSR section. Since the commencement of UNCLOS III these articles on conduct of MSR have been argued and reargued, with each successive revision creating more points of contention. These articles refer to the specifics of MSR. They encompass MSR in the territorial sea, EEZ and on the continental shelf. Bernard H. Oxman, Deputy Chief of the US Delegation to the 1977 UNCLOS sessions in New York, has identified four main elements to be settled on the MSR issue.<sup>-9</sup> These are:

- 1) The specific obligations for those organizations conducting MSR in the economic zone or on the continental shelf;
- 2) The issue of requesting consent from the coastal state to conduct MSR;
- 3) The coastal state duty to grant consent; and
- 4) The issue of implied consent after a specified period of time.

These four points highlight the areas of non-agreement, which include all the articles on MSR, except those on the territorial sea.<sup>-10</sup>

According to the US oceanographers, the development of the present articles on conduct and promotion of

MSR has been one of continual disappointment. The Group of 77 has decided on requirements that demand both specific obligations be met by the researching institution and for a consent requirement to gain access to the EEZ.<sup>-11</sup> This has not always been the case. The original SNT included various obligations that had to be followed,<sup>-12</sup> but it differentiated between "fundamental" and "resource-related" research when initiating the consent requirement.<sup>-13</sup> In retrospect,

"from the US point of view it is ironic that, having initially agreed to a substantial list of obligations to be assumed by a researching state (advanced notification, sharing results, etc.) precisely in order to avoid the need to seek coastal State consent, the US now finds itself confronted with a text that provides both the obligations AND coastal State consent."<sup>-14</sup>

The scientists have never ended their attempt to alter the beliefs of the developing world and to persuade the US negotiators to stand firm on scientific freedom. They argue that it is essential to have access to as much of the oceans as possible to properly investigate marine phenomena that affect the entire world.<sup>-15</sup>

Some oceanographers still wish to return to the concept of "fundamental" versus "applied" research. This concept offered simpler procedural requirements if the coastal state agreed that the research was fundamental in nature. Other oceanographers appear willing

to yield to the consent regime, eliminate the obligations and simplify the entire MSR section.<sup>-16</sup> This would have been useful to counter the first mandatory consent demands of the Group of 77. At that time, this idea might have been accepted by the developing nations as a compromise. The compromising days have passed and a structure has evolved that is complex and not in the best scientific interests of the US.

#### 1. LDC Rationale

The rationale supporting the claims and the policies of the developing nations on the consent problem, as enumerated by Oxman, has gained considerable support. In a 1971 statement, Arias Schreiber of Peru, mentioned several of the major principles on which developing countries formulate their policies for the LOS.<sup>-17</sup>

They include:

- 1) The right to dispose of natural resources existing in front of their coasts;
- 2) The right to adopt the necessary rules to prevent pollution and other harmful effects off their coasts;
- 3) Exercising their sovereignty to enforce 1 and 2 above, by establishing limits of their maritime jurisdiction;
- 4) Dictate rules in the areas established in 3 above, for fisheries, marine hunting and exploitation of the seabed and subsoil;
- 5) Authorize, supervise and participate in MSR activities in areas established in 3 above; and
- 6) Respect the identical rights of states neighboring and riparian to the same sea.



These guiding principles make it easy to understand the reasoning of the coastal states. They support these new principles and believe in their value based on the performance of history. Resources exploitation has been rampant throughout the developed world. Frequent abuses of the freedom of scientific research by major powers have not inspired trust.

The present day nationalism that has spread throughout the developing nations has caused political exaggerations in a number of decisions.<sup>-18</sup> The justification is overwhelming for giving, permitting or allowing the coastal state to assume a large number of restrictive and authoritative powers in the waters off its coast. A

"firm attitude (has been) adopted by the majority of developing countries which advocate(s) the establishment of certain normative guidelines intended to minimize the excess and abuses which have been committed in the name of the so-called freedom of scientific research."<sup>-19</sup>

This attitude has resulted in articles of the ICNT that virtually assure complete coastal state control of all MSR activities within the EEZ or continental shelf. Unfortunately, this counters the tradition of Western researchers and a genuine feeling of hopelessness pervades many researching institutions. The belief exists by many oceanographers that the freedom of control given to the coastal state in the ICNT,

"places beyond community control the capacity to

conduct rational inquiry into a vital part of the planet shared by all," and "no single coastal state can offer reliable assurance that any other state will follow an enlightened policy that facilitates rather than cripples MSR."<sup>-20</sup>

These two positions continue to be argued at the present Conference and will remain unresolved. The give-and-take bargaining on the consent issue appears to have ended and only minor, inconsequential, changes will be made in any future Text.

## 2. US Recommendations v. the ICNT

Once it was established that there were going to be certain specific obligations placed upon the researching institution, the elaboration of them did not take very long. Many customary practises were incorporated in these articles, such as: the nature and objectives of the research; the sponsor's name and cruise dates, etc. The obligations that exist today in the ICNT<sup>-21</sup> are quite similar to the original ones the US presented in place of a consent regime.<sup>-22</sup> However differences do exist and a comparison between the objectives that the scientific community was seeking for MSR and what resulted in the ICNT may be fruitful.

The Ocean Policy Committee of the National Academy of Sciences has summarized the basic objectives of the US oceanographic community in the EEZ.<sup>-23</sup> They are:

- 1) Establish the right to conduct all research beyond the territorial sea (except for carefully specified and limited types);

- 2) Provide predictability in the response of the coastal state so that planning and conduct of research are facilitated;
- 3) Secure protection for researching states or organizations against arbitrary or unreasonable restrictions resulting from differences in interpretation of conditions and obligations;
- 4) Ensure that the procedural provisions of the treaty provide predictability in planning and in the conduct of research; and
- 5) Maintain the traditional practise to publish and disseminate research results.

If the MSR articles in the ICNT had met these objectives, the oceanographic community was willing to accept the following responsibilities: <sup>-24</sup>

- 1) Keep the coastal state fully informed concerning the nature, objective, schedule and participants of the proposed research project;
- 2) Ensure the rights of the coastal state to be represented in the program;
- 3) Provide the coastal state with preliminary reports and final reports;
- 4) Share data and samples; and
- 5) Seek to provide the coastal state with assistance in interpreting research results.

Unfortunately, the oceanographic community could preserve only portions of one objective and could not reduce their responsibilities.

The requirements of ICNT Article 247 destroyed the first few objectives by granting the coastal state permission to demand a consent request from the researcher;

by allowing the coastal state to formulate their own rules and regulations; and by allowing the coastal state to deny consent when they believe they have received false information from the requesting organization.

ICNT Articles 253 and 254 also considerably damage the procedural predictability objective of the oceanographers. The lengthy time periods involved in the implied consent article (253) and the ability of the coastal state to halt research activities at their discretion (254) does not permit the scientist to make an exact plan and carry it out.

A minor reprieve was given to the oceanographers by a slight retreat of the LDC position in the RSNT over publication of research results.<sup>-25</sup>

"Coastal states justified their insistence on some right to limit publication on the grounds that unexpected data of direct economic significance might be discovered. While any right to restrain publication can hardly be viewed with favor, the ICNT at least links this to requirements for granting consent.<sup>-26</sup> Thus it is up to the scientists concerned to decide in advance whether they will agree or prefer to cancel or alter the project."<sup>-27</sup>

Finally, the ICNT took the five responsibilities of the oceanographers and made two detailed articles out of them by expanding every offer that was presented by the US.<sup>-28</sup> More specific data about the vessel, method and means of research, exact locations, dates and the extent of coastal state participation in the project were included in ICNT Article 249. ICNT article

250 describes the obligations the researcher has to the coastal state when actually undertaking the research. It includes the last four responsibilities offered by the US scientists and a requirement to inform the coastal state of any changes in the project and to remove any equipment after the research is completed. These ICNT articles are nearly identical to the previous texts.<sup>-29</sup> This indicates that scientists have not been faced with recent unreasonable demands, but old ones that they have repeatedly attempted to modify.

Subsequently, only a few additions were requested by the developing states. The sum of these articles is a situation that is not liked by US oceanographers. Research predictability is questionable. There will be greater monetary expenses, and much more time will be needed for organization. It is a situation that the scientific community can adapt to, and must adapt to, if it desires to continue MSR in the EEZ of LDC coastal states.

The other articles found in the section on Conduct and Promotion of MSR have not been subject to as much debate as those previously mentioned. General agreement on the others is assured and their consequences to research in the EEZ are not as significant. Only ICNT Article 248 may be a means of rectifying the



problem of international MSR.

The article appears to provide an implied consent procedure permitting regional or international organizations to conduct research in the EEZ or on the continental shelf of a coastal state that is a member of the organization. This could only occur after notification to the coastal state and the coastal state's original approval of the project.

"The article seems to reflect a perception among developing countries that negative control over scientific research is insufficient. The power to stop a project does not ensure that projects of concern to developing countries will be carried out."-30

This gives the developing countries a way to preserve their control over the EEZ and maintain national pride. It also allows research to take place that is obviously going to be under the direction of a large major power. This would easily reduce the number of official maneuvers involved by the US when seeking access to coastal EEZs.

#### The Other MSR Sections

The sections on Legal Status of Scientific Research Equipment, Installations and Equipment in the Marine Environment and Responsibility and Liability have presented no important obstacles to the negotiators. The section on Settlement of Disputes, though, deserves a brief mention.

ICNT Article 265 allows the coastal state to be exempt from the standard dispute settlement procedures of the Text when conflicts arise resulting from the consent question and/or cessation of research.<sup>-31</sup> This reinforces the total dominance of the coastal state over the conduct of MSR in its EEZ. These powers are much more stringent than the previous Texts<sup>-32</sup> and therefore, may be subject to renegotiation during the 1978 sessions of UNCLOS.

The preceding overview of the ICNT, its complications and its predecessors has placed into perspective the current status of the Law of the Sea as it refers to marine scientific research. The developing world has been able to force the hand of the major powers, primarily the US and the Soviet Union. They have been able to persuade the USSR to accept their ideas, thus, leaving the US almost completely isolated on the issue of freedom of scientific research. The loss of Soviet support on this issue severely damaged the influence of the US oceanographic community and the LOS negotiators. The scientists' limited influence over the State Department negotiating team has been reduced even more. They can only make suggestions that may, in some way, minimize their plight. These attempts will be made at Geneva in 1978 with little, if any anticipated success.

## NOTES

<sup>1</sup>Note by the President of the Conference, UN Doc A/CONF.62/WP.8/May 1975.

<sup>2</sup>Alexander, Nixon and Cameron, "The Costs of Failure," p. 6.

<sup>3</sup>Informal Single Negotiating Text, UN Doc. A/CONF.62/WP.8/Part III, Marine Scientific Research Article 2; Revised Single Negotiating Text, UN Doc. A/CONF.62/WP.8/Rev.1/Part III/6 May 1976, Article 49; Informal Composite Negotiating Text, UN Doc. A/CONF.62/WP.10/Corr.1/15 July 1977, Part XIII, Article 239.

<sup>4</sup>SNT Art. 3; RSNT Art. 4; ICNT Art. 240.

<sup>5</sup>SNT Arts. 4,6; RSNT Art. 51; ICNT Art. 241.

<sup>6</sup>SNT Art. 7; RSNT Art. 52; ICNT Art. 242.

<sup>7</sup>SNT Art. 1; RSNT Art. 48.

<sup>8</sup>SNT Arts. 8-11; RSNT Arts. 53-56; ICNT Arts. 243-245.

<sup>9</sup>Bernard H. Oxman, "The Third United Nations Law of the Sea Conference: The 1977 New York Session," American Journal of International Law, vol. 72, no. 1 (1978), 75.

<sup>10</sup>ICNT Art. 246.

<sup>11</sup>ICNT Arts. 247, 249, 250.

<sup>12</sup>SNT Arts. 15, 16.

<sup>13</sup>SNT Art. 18.

<sup>14</sup>Subcommittee on International Relations of the Advisory Committee on the Law of the Sea, John T. Swing, Rapporteur, "Third United Nations Conference on the Law of the Sea: Report on the 1976 New York Sessions," San Diego Law Review, vol. 14, no. 3(1977), 745.

<sup>15</sup>Burke, Legal Problems of Research, pp. 2-4.

<sup>16</sup>Letter from Elliot Richardson to Warren Wooster, May 24, 1977, from the private files of John A. Knauss.

<sup>17</sup>Schreiber, "LDC Reasons for EEZs," pp. 5-6.

<sup>18</sup>Munier, "Politics of Marine Science," p. 220.

<sup>19</sup>Vargas, Normative Aspects, p. 1.

<sup>20</sup>William T. Burke, Scientific Research Articles in the Law of the Sea Informal Single Negotiating Text, Law of the Sea Institute, Occasional Paper, No. 25 (Kingston, RI: LOS Institute, University of Rhode Island, 1975), p. 2.

<sup>21</sup>ICNT Arts 249, 250.

<sup>22</sup>Osgood, et al, National Ocean Policy, p. 182.

and

Gerald Kovach, United State Proposal for Marine Scientific Research: Draft FOSTG (Washington, D.C.: National Academy of Sciences, 1973), Article 7.

<sup>23</sup>Ocean Policy Committee, "The MSR Issue in the LOS," p. 232.

<sup>24</sup>Ibid.

<sup>25</sup>RSNT Art. 61.

<sup>26</sup>ICNT Art. 250.

<sup>27</sup>Oxman, "UNCLOS 1977 Session," p. 77.

<sup>28</sup>ICNT Arts. 249, 250.

<sup>29</sup>SNT Arts. 15, 16; RSNT Arts. 58, 59.

<sup>30</sup>Oxman, "UNCLOS 1977 Session," p. 77.

<sup>31</sup>ICNT Arts. 247, 254.

<sup>32</sup>SNT Art. 37; RSNT Arts. 76, 77.

## ALTERNATIVES TO UNCLOS

Problems in the gross imbalance of knowledge and trust between the developing countries and the large technological powers have caused international marine science research to take on a new form in the last quarter of the twentieth century. The developed and developing countries must be educated. This is needed before any reversal in the trend of complete coastal state dominance of the EEZs is possible. The cultural differences will have to be understood by the developed nations, and the technology and formal education necessary to pursue economic growth in the modern world will have to be learned by the LDCs.

In spite of these problems, MSR can provide a means of international cooperation, that can help develop meaningful relations between different societies.

"By fostering scientific cooperation among oceanographers of different countries, we are learning ways of finding agreement among citizens and statesmen. By working with each other we are gaining mutual understanding of the social and economic constraints that affect the thought and action of scientists in different countries."-1

These fundamental contacts are essential to the growth of peaceful international relations. In 1972 the US oceanographic community had four options on how to approach the world MSR situation.<sup>-2</sup> Today there appears to be only one of those options remaining.



It is to accept the fact that a major restructuring of the relationships governing research in the oceans has occurred. Failure to accept this fait accompli, can only hurt and minimize the programs of MSR conducted by US oceanographers. Once acceptance of this situation is accomplished then methods to create less complicated and restrictive controls over MSR in EEZs of coastal states can be pursued. The need is clear for development of an alternative to the situation offered within the text of the ICNT.

"Since World War II, the significance of resources of the seas has engaged the attention of individuals and nations. There has been an urgent realization that within the world ocean or 'inner space' there exists a vast reservoir of deposits of mineral resources, nonliving resources, as well as living resources, awaiting technological feasibility for exploitation and utilization by the world community. In view of the incalculable potentialities of the ocean's resources, many states have made unilateral revisions of customary boundaries and established more exclusive ones."-3

This simple paragraph gives the underlying reason behind the conflicts present at the LOS Conference and also establishes the recent trend in political actions that have had impact on the conduct of MSR.

#### I. FUNDAMENTAL V. APPLIED RESEARCH

The support for formation of clauses like those in the 1958 Convention on the Continental Shelf that referred to non-interference of "fundamental"

oceanographic research<sup>-4</sup> and "purely scientific research"<sup>5</sup> has disintegrated. An attempt, though, to separate fundamental from applied research is found in Article 247 of the ICNT. The article states that, "the coastal state shall, in normal circumstances grant their consent." It goes on to say that the coastal state is free to deny access to its EEZ for certain reasons.

The primary concern to oceanographers is the reason of denial of access because the research "may be of direct significance for exploration and exploitation of natural resources, whether living or non-living."<sup>6</sup> This may appear to separate fundamental from applied, but in fact it does not. The damage is done by the provisions of ICNT Article 265. If the coastal state and the researcher have a difference of opinion on the interpretation of activities related to natural resources exploitation or exploration, it is not subject to normal dispute settlement procedures. This permits total discretion over any research by the coastal state.

Justification for such discretion was given by Brazil in 1971.

"With regard to scientific research, it was not always possible to distinguish between pure research and research for economic or military purposes. In the last analysis, every particle of scientific knowledge could be translated into terms of economic gain or national security and, in a technological society, scientific knowledge meant power. Consequently, it was imperative that coastal

states should exercise some form of control over scientific research off their coasts, even when it was carried out under the auspices of purely scientific institutions."-7

Brazil's position is easy to understand and difficult to deny. The progression from fundamental research to exploitation of natural resources is clear.

## II. PLANS FOR MSR

It is evident that oceanographers and diplomats have not achieved a suitable method for progressing with MSR under the realigned jurisdictional regime that has emerged from UNCLOS. In any event, should UNCLOS be successful and produce a comprehensive treaty on the Law of the Sea, or should no treaty emerge from the discussions, a plan will be needed by the US for the conduct of MSR in the EEZs of coastal states.

### Separate MSR Convention

Several suggestions have been mentioned by diplomats, scientists and others at the international level and below, for proceeding with MSR during an interim period, until the treaty enters into force, or under a no treaty circumstance. The most optimistic of these suggestions proposes that the new international law on scientific research should be in the form of a separate and distinct convention on MSR.<sup>-8</sup> This alternative would seem to present the same problems that are now being encountered at the UN. The same clash of ideas

and cultures that is hampering the current talks would destroy effective negotiating procedures. "It is sheer folly to think that one comprehensive document could be signed by all members of the community of nations."<sup>-9</sup> The attempt to remove science from the rest of the highly politicized talks does, however, seem a bit hopeful.

### International Organizations

A second possibility was conceived by the International Council of Scientific Unions (ICSU). It consisted of an international body that would serve as an approving agent for proposed MSR projects.<sup>-10</sup> This idea was presented in 1958 at the First UNCLOS, but was discarded by the US after Interior Department officials objected. The US may have been fearful of intruders harvesting the benefits of the US continental shelf or gaining coastal access and conducting clandestine investigations.

The ICSU proposal had a number of supporters<sup>-11</sup> and its defeat in 1958 did not end the push towards the idea of a central marine science governing body for the oceans.

The powers of any international controlling organization would vary according to the interests of the party that designed the organization. It could assume a posture of complete control, like the proposed International Seabed Authority, or it could have a

substantially insignificant role as a go-between. Supporters of an international control body cite the successful Outer Space Treaty<sup>-12</sup> as an indication that international agreements on scientific research can be peacefully concluded.

The oceans do present a different medium to the negotiators and the prospects of economic return appear much closer in the oceans than in outer space for most LDCs. Because of the visibility of potential gains from the oceans and the diversity of each country's internal problems, cultures and technical capabilities, the Bologna Workshop on Marine Science concluded that no global solutions are possible for marine science.<sup>-13</sup> This is extremely important when attempting to justify an international body as a solution to MSR.

Many of the international MSR organizations deny the fact that an international solution is not feasible. They point out that MSR has been conducted under the auspices of international organizations within and outside the UN structure. In general, these groups are better equipped to deal with access to waters in foreign maritime zones because of their international character. They also note, that they have played a part in the development of MSR in the LDCs and have received recognition at UNCLOS.<sup>-14</sup> A brief account of their impact on international MSR, the thoughts and



development of LDCs in MSR, and the potential for future significance of international MSR organizations, is necessary for consideration of either the first or second alternatives that have been presented.

The Intergovernmental Oceanographic Commission (IOC) of the UN is generally regarded as the leading international body administering programs of MSR. By 1973 it had 74 member countries and had initiated several major oceanographic expeditions and over 200 scientific cruises.<sup>-15</sup> It had also been chosen as the lead agency to implement the International Decade of Ocean Exploration of the Long-term and Expanded Program of Oceanic exploration and Research, (IDOE of LEPOR). In this capacity the IOC believed they had the political influence necessary to keep their programs going and to be effective.<sup>-16</sup> These two points are the foci of doubt by many nations of the world.

Even with growing LDC membership, the IOC is frequently regarded as a rich-man's club by many LDC members.<sup>-17</sup> They feel they have no significant input into the operations or decision making of the organization. A glance at the roster of members indicates that half the countries of the world have not joined the IOC. This may significantly reduce both the influence and the effectiveness of the IOC, especially considering that many coastal states are not members.

The membership of the IDOE also reveals the dominance of the developed countries. Most African and Mid-East nations, as well as some Asian nations, have not joined the IDOE. The arguments of the LDCs center around the fact that the developed nations, primarily the US, control all aspects of MSR under IOC auspices. This may be justified by examining the types of research projects being conducted, their geographic locations and their immediate benefits to the developing world. (Appendix One)

The position and attitude of the US concerning its role in the IOC is also strikingly pertinent. The US, by its own admittance, does play a lead role in IOC programs, but also participates only to maintain prestige.<sup>-18</sup> Such a policy provides a great deal of discouragement to a prospective LDC member of the IOC. They do not want to be controlled by a major power, yet an international organization may not be able to be of use to the LDC without major power participants.

The staff of the IOC and other international organizations offer different reasons for their continued existence. They state that

"the scientific study of the sea is a natural field of international scientific cooperation. Moreover, such cooperation is necessary if human understanding of the oceans is to keep pace with human needs."<sup>-19</sup>

In support of these general comments Jorge Vargas of

Mexico indicates that,

"scientific research activities in oceans could result in genuine coordinated efforts of an international nature, since Mexico shares the opinion that such activities do not recognize boundaries...(therefore) the sea, far from dividing us, is the element that can best unite us."-20

The IOC's primary function is to "promote scientific investigation of the oceans with a view to learning more about the nature and resources of the oceans through the concerted actions of its members."-21 It does not carry out the research itself, but this is not necessarily a major weakness of the organization. The IOC operates as a cohesive agent in the developmental process of bringing nations together to work on the same project. Their mediocre success is due to insufficient funding and their unique and confusing position within the UN structure.-22

According to Skolnikoff there are four functions of an international organization. They are: 1) service; 2) norm creation and allocation; 3) rule observance and settlement of disputes; and 4) operations.-23 The present clamoring for a separate and distinct international organization to control MSR would provide all four of the basic functions to its members, while fulfilling the goal of MSR to "observe, understand and explain the oceans."-24 Unfortunately, a truly representative international organization has not developed and

satisfied these requirements.

It appears, though, that international organizations have a place in the future of MSR. The ICNT has indicated that they should be used more frequently in the future to conduct MSR and this concept has been accepted. It is still uncertain if these organizations can equally distribute costs and benefits of the research.

#### Regional Arrangements

The third avenue that may provide a means of mutually beneficial MSR for the researcher and coastal state is regional arrangements. The growth of regional organizations to handle a variety of common interests indicates acceptance of this approach by many nations.

Not only have the developed nations been the leaders in organizing regional defense treaties, but they have spawned many non-defense pacts.<sup>-25</sup> Indications are that many regional marine pacts may emerge after UNCLOS.<sup>-26</sup> These organizations may or may not be amicable to the idea of unrestricted MSR in their regional waters and consequently the US oceanographic community may be deliberately excluded from doing research in broad areas of the oceans.<sup>-27</sup>

On the other hand, it has been shown that regional agreements have a number of distinct advantages over international agreements. Paramount among these are

the facts that regional treaties are easier to create and that regional marine agreements would be preferable to national extensions of maritime jurisdiction.<sup>-28</sup> The strength of these unions does not always remain firm or last forever, but it establishes a base from which to proceed. History has shown, in Europe specifically, that regional agreements can provide economic returns and security to all the participants.<sup>-29</sup>

The increase in coastal state jurisdiction may make it imperative for the LDC coastal states to form and participate in developmental arrangements. These arrangements may help reduce the potential damage the coastal states may cause to their own marine environment and resources by their lack of sufficient marine management experience.<sup>-30</sup>

The formation of regional agencies composed of technical personnel from the countries comprising the region could be used to advise their respective governments on the purposes and intentions of research requested by developed nations. This would help establish credibility for the internal MSR structures of the regional nations as well as reduce the red-tape required for gaining access to their waters by Western societies.

It is encouraging to note that the Chairman of the IOC, after the 1977 UNCLOS sessions ended, reported that LDC coastal states appeared concerned and willing



to act in a "responsible fashion" when dealing with individual states or international organizations on marine matters. -31

If coastal states realize their vital role in the management of the waters within their EEZs, and the important reasons behind proper marine management by joining together in regional groups outside assistance from the technologically advanced nations may be easier to arrange.

#### Bilateral Agreements

The fourth approach available to conquer the MSR dilemma is to complete bilateral treaties with those countries in whose waters US scientists desire to conduct research. This has been the traditional US approach for many years and will most likely continue after a treaty is agreed upon or in place of one. -32

There are some limitations to the effectiveness of future bilateral treaties. Many treaties will probably be concluded with other developed nations with whom the US already possesses good working relationships. These would be formed to avoid the restrictions of either the new codified laws of a successful UNCLOS or to establish their own form of customary law.

Bilateral agreements with the LDCs, "if they are in fact to provide meaningful benefits, will have to

provide the coastal state with more significant benefits than those set forth in Article 250" of the ICNT.<sup>-33</sup> This second assumption may or may not be the case, but it must be considered. If coastal states do demand more benefits, then the scientists may prefer to work within the known restrictions of the ICNT instead of establishing bilateral agreements.

#### Non-Observance of Special Maritime Jurisdiction

The final alternative is for US oceanographers to ignore the new zones of coastal state jurisdiction.<sup>-34</sup> US R/Vs would conduct MSR in the contested waters demonstrating the US intentions of preserving MSR. This alternative may meet with some success in waters of nations who have no means of enforcing their new laws. Yet, it may also result in the loss of very expensive oceanographic vessels if the coastal state does possess the means to capture the R/Vs. It would also heighten the fears of many LDCs.

The five possibilities offered, and variations of them, do not provide a suitable alternative to an UNCLOS treaty. The US has to formulate a new approach to MSR that can be reviewed as innovative and supportive of the US oceanographic community, yet amenable to the conditions demanded by the developing coastal states.

## NOTES

<sup>1</sup>IOC-UNESCO, Draft of a General Scientific Framework for World Ocean Study (Paris: IOC, 1964), p. 14.

<sup>2</sup>Munier, "Politics of Marine Science," pp. 221-222.

<sup>3</sup>Erin Bain Jones, Law of the Sea-Oceanic Resources (Dallas: SMU, 1972), p. 67.

<sup>4</sup>Convention on the Continental Shelf, Article 5, paragraph 1.

<sup>5</sup>Ibid, paragraph 8.

<sup>6</sup>ICNT Art. 247, paragraph 4.

<sup>7</sup>Statement of the Brazilian Delegation, UN Doc. A?AC 138/SR 54, p. 9.

<sup>8</sup>Moore, "The Future of Scientific Research," p. 252.

<sup>9</sup>Alexander, Nixon and Cameron, "The Costs of Failure," p. 16.

<sup>10</sup>Burke, "Legal Problems of Research," p. 48.

<sup>11</sup>Osgood, et al., National Ocean Policy, pp. 192-193 and

Charles Weiss, "Technology Transfer and the Oceans," in Law of the Sea Institute: Eighth Annual Proceedings, ed. by John K. Gamble Jr. (Kingston, RI: LOS Institute, University of Rhode Island, 1973), p. 83.

<sup>12</sup>Multilateral Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, UNTS , 1967.

<sup>13</sup>Stewart, "The Bologna Workshop," pp. 241-247.

<sup>14</sup>ICNT Art. 248.

<sup>15</sup>Margaret E. Galey, IOC: Its Capacity to Implement an International Decade of Ocean Exploration, Law of the Sea Institute, Occasional Paper No. 20 (Kingston, RI: LOS Institute, University of Rhode Island, 1973), Introduction.

- <sup>16</sup>Ibid.
- <sup>17</sup>Bello, "The Present State in LDCs," p. 233.
- <sup>18</sup>Dr. Thomas S. Austin, Chairman of the Panel on International Programs and International Cooperation in Ocean Affairs, Recommendations to the Department of State on the US Policy Towards the IOC (Washington, D.C.: State Department, February 1, 1977).
- <sup>19</sup>IOC, Draft Scientific Framework, p. 12.
- <sup>20</sup>Vargas, Normative Aspects, p. 15.
- <sup>21</sup>Pacem in Maribus VI, introduction.
- <sup>22</sup>UN Organizational Chart, private files of John A. Knauss.
- <sup>23</sup>Alexander, "Regionalism," class notes.
- <sup>24</sup>Osgood, et al, National Ocean Policy, p. 179.
- <sup>25</sup>European Economic Community; Maritime Liner Conferences; Outer Space Treaty; Trade Agreements, etc.
- <sup>26</sup>Alexander, "Regionalism," class notes.
- <sup>27</sup>Lewis M. Alexander, Regional Arrangements in Ocean Affairs (Washington, D.C.: Office of Naval Research, 1977), p. 134.
- <sup>28</sup>Mark W. Janis, "The Development of European Regional Law of the Sea," Ocean Development and International Law, vol. 1, no. 3 (1973), 277.
- <sup>29</sup>Ibid, pp. 277-284.
- <sup>30</sup>Alexander, Regionalism, ONR, p. 140.
- <sup>31</sup>IOC-UNESCO, Report by the Chairman on His Participation in the Third UNCLOS (Paris: IOC, 1977), p.2.
- <sup>32</sup>U.S. Department of Commerce, Workshop on Scientific Research, p. 5, and comments by George Taft, US Delegate to UNCLOS, at the University of Rhode Island, March, 1978; and letters from John Knauss and David Ross to Warren Wooster, a brief on the reasons for a successful UNCLOS treaty, January, 1978; and Norman Wulf to John Knauss, January 25, 1978. From the private files of John A. Knauss.

<sup>33</sup>Letter from Norman Wulf to John A. Knauss,  
January 25, 1978. Private files of John A. Knauss.

<sup>34</sup>John Craven, Statement in "Oceanographers  
See Work Crippled by New Regime," in Ocean World,  
vol. 1, no. 1 (1978), p. 11.



## VI

### A NATIONAL POLICY FOR MSR

The United States has suffered through many severe crises in its brief history. The circumstances facing our international MSR effort do not qualify as one of this country's greatest calamities. If science is halted in a 200 mile wide coastal belt, surrounding all the continents, a decline in man's understanding of the marine processes that affect him can be expected. However, a complete halt to marine science is unlikely. Many of the technologically advanced nations will certainly not halt scientific research in their own waters or on the high seas. Likewise, many of the developing nations will seek assistance in learning more about the marine environments adjacent to their shores.

"Ultimately scientists will work where they can find suitable conditions, thus depriving other regions of the increased knowledge, and often of the educational opportunities that accompany participation in research programs."-1

For these reasons it is clear that any program that the US can offer that may assist this natural continuation of MSR will be accepted by some, if not many, countries seeking the answers to the oceans endless questions.

#### I. A NATIONAL POLICY

An integral part of the proposed policy would be

a standard format for arranging US operated MSR projects anywhere in the world. This would ultimately destroy a portion of the independence of each separate researching institution and would also require State Department policy adjustments on a number of vital international issues. It would, though, centralize the US international MSR efforts.

Also within this system would be a controlling body, possibly UNOLS, to enforce US performance standards for MSR projects and to act as the negotiating liason with the coastal states.

A general list of what the US objectives are in MSR and a non-negotiable list of obligations that the US will fulfil when conducting research must also be embodied in the national policy.

As a matter of policy the US should make significant increases of educational and training aid to LDCs that can help solve the immediate needs of the respective nations. This assistance can be channeled through international organizations or provided directly to the recipient. In return, the US should be allowed to monitor the use of the funds or personnel provided. If assistance was requested for MSR the US should expect that a strong national interest exists in the coastal state for this type of growth and that any aid provided can be halted if the recipient fails to maintain

US standards.

Interspersed throughout the opinions of the US oceanographic community on the consent issue is found a subtle, but constant insinuation that the LDCs are not able to make rational decisions on MSR. This appears to be the crux of the issue. There does not appear to be much optimism by the scientists that consent will be granted with few minor complications by the developing states. Such an apathetic impression can create adverse attitudes towards permitting MSR in coastal waters by some of the LDCs.

Of course, the scientists are concerned that they will be excluded from the best research waters of the oceans. It must be realized, though, that this fear is generated from the fact that a few xenophobic governments of some LDCs are controlling or persuading others to be wary of MSR conducted by the developed countries. "It cannot be presumed that logical arguments will automatically prevail in the LOS Conference any more than they do in Congress, corporate board rooms or faculty senates."-2

The obvious fact that most of the developing states do not possess a MSR infrastructure is alarming and does present problems, but there is no reason to believe that assistance will not be requested from neighboring states, competent international organizations

or even from the researching institution, itself, to help make the proper decisions when consent is requested.

Assuming that coastal states may seek advice or may actually make rational decisions on suggested MSR in their EEZs, will reduce the apprehensions of the oceanographic community tremendously. This is a key factor in formulating a US position on MSR; appreciation of the concern that the coastal state holds in the waters off its coasts.

Finally the option should be available to the coastal state to submit any request for conducting MSR in their EEZ to any competent international or regional organization they desire for review. This would help clarify any items the coastal state did not understand, and give added assurance to the researcher that the project was reviewed by competent individuals.

## II. COMPONENTS OF A NATIONAL POLICY

1. US State Department recognition of the jurisdictional powers of coastal states over MSR in the EEZ.
2. US Objectives in MSR
  - a. Peaceful acquisition of scientific knowledge
  - b. Rational use of the oceans
  - c. Predictability
  - d. Preserve and protect US marine interests
  - e. Assist and promote international and regional MSR for the benefit of mankind
  - f. Establish educational programs for LDC MSR administrators and government officials
  - g. Make no legal claims based on MSR

3. Centralized MSR Control Organization
  - a. Data center for US MSR projects
  - b. Project coordinator
  - c. Set minimum standards for research performance
  - d. Negotiate research treaties with foreign governments and institutions
  
4. Standards and Obligations for Concluding Treaties Covering MSR in Coastal State EEZs
  - a. Recognize coastal state's concern for proper development of its EEZ
  - b. Recognize the internal needs and concerns of the coastal state
  - c. MSR is conducted for the benefit of mankind
  - d. Specific obligations to the coastal state
 

No less than six months in advance of the proposed arrival date-

    - 1) Indicate the nature and objectives of the project
    - 2) Indicate the method and means of research
    - 3) Indicate the geographic areas of activities
    - 4) State the proposed arrival and departure dates
    - 5) Indicate the name of the sponsoring institution and project director

Other requirements:

    - 6) i. Permit the coastal state to participate in all phases of the project, if it so desires, financed by the US,
 

OR

    - ii. The coastal state may request optional assistance, of an equal monetary amount to the cost of participating in the MSR, for use in meeting more important internal needs of the coastal state that are also of a marine nature,
 

OR

    - iii. The coastal state may request optional assistance, equal to the costs in 6.i above, for use in meeting more important internal needs of the coastal state that are not marine related.
  - 7) The coastal state has the right to submit the research proposal to a competent regional or international organization for review
  - 8) The coastal state has the right to have copies of all data and samples which may be divided without detriment to their scientific value



- 9) The coastal state has the right to have interpretations of all aspects of the MSR
- 10) Ensure that the research results are made internationally available through appropriate coastal state, US or international channels, as soon as practicable after completion of the research.
- e. Coastal State Obligations
  - 1) If the coastal state selects option 4.d. 6.i or 4.d.6.ii above, then they must show a growing national infrastructure in MSR and a national commitment for proper marine environmental management
  - 2) The coastal state must facilitate access to their ports for the research vessels
  - 3) The coastal state must respond to a consent request within four months of its receipt
    - i. If consent has not been granted, the coastal state should give the reason and indicate if another application will be accepted
    - ii. If no response is received, than the project is assumed to have been rejected.
  - 4) If the coastal state accepts option 4.d 6.iii above, then the coastal state can, in no way, interfere with the proposed MSR project.

The policy presented for consideration is not one that will meet with eager acceptance by the State Department, the US oceanographic community or the coastal states. But it is one that offers slightly more leeway to the scientists and indicates to the coastal states the genuine interest the US has in their development. Any mention of the territorial sea or the high seas were unnecessary, because these areas have not been under discussion.

#### Section 1. US State Department

The State Department must finally yield to the

obvious and recognize the right of the coastal state in the new EEZ. The overwhelming international move to organize functional marine zones would be easier to accept by a uniform recognition of the EEZ and the coastal state jurisdiction accompanying it. The official change in US policy would not really come as a surprise to the international community and would certainly provide improved relations between the US and many countries of the world.

The diplomatic tendency has been to present the official US view of freedom of scientific research, but not to raise significant objections to the twelve mile territorial sea or to the EEZ concept. It would be difficult for the US to disagree on some of the functional ideas encompassed within the EEZ, because of our own fishing and environmental protection laws. Therefore, as a prerequisite to future meaningful MSR projects, it is essential for official US recognition of the rights of coastal states in the EEZ.

## Section 2. US Objectives in MSR

The US objectives of this section are general ideas for the basis of policy and future agreements of a bilateral or regional form. Foremost among these would be the aim of peaceful acquisition of scientific knowledge. Such a broad statement can infer many different types of

research, but the implication has been made clear that coastal states will control all research in their EEZ. Therefore, the interpretation of this statement is left open. Afterall,

"if one expresses belief in the principles that scientific research is to be for peaceful purposes, is to benefit all mankind, and shall not form a legal basis for claims to resources or areas, the question of what type of research may be carried on seems to be superfluous."-3

This statement also encompasses other principles that should form the support for US MSR. Additionally, it should be mentioned that scientific research is a rational use of the ocean and deserves the widest possible freedom and a significant amount of predictability. This would reinforce the moral beliefs of the oceanographers and indicate to the developing countries that the US still supports complete access to those area of the oceans that have been placed under political control by coastal states.

Another important objective to be preserved is one that indicates the MSR programs of US institutions are in coordination with the overall US effort to preserve and protect vital US marine interests throughout the world. This may not be very agreeable to the oceanographers who desire to escape from any State Department or Naval connections with their sponsoring organizations, but it must be a part of a national policy. It is common knowledge, in any case, that much of the US ocean-

graphic research done by private institutions receives funds from the civil government and the military, and this should not form a barrier to future international research programs by the US.

On a completely different tack, but one necessary in normalizing relations between the US and LDCs, strong emphasis should be placed on providing assistance and promoting international and regional MSR. The present US participation in international MSR organizations is commendable, but it has also been indicated that the amount of US aid and interest in the LDCs is pitifully small.<sup>-4</sup> US university assistance is also plagued by financial constraints and the loss of faculty expertise when becoming involved in international assistance programs.

A national commitment for programs of this type would generate support for these programs within the US and facilitate the efforts of those agencies and institutions that are currently working in this area. Directly related to these assistance programs is the development of a US program of providing training for LDC MSR administrators and government officials. It has been mentioned repeatedly that effective MSR decisions by LDCs are impossible without having the internal knowledge and interest in the marine environment.<sup>-5</sup> Recently,

the IOC has begun to offer scholarships to individuals of LDC nations to attend the Marine Affairs Program at the University of Rhode Island. Such scholarships offered by the US itself and the willingness of the US to provide local administrative training in the LDCs, would be major components of a system that is truly concerned about the development of the rest of the world.

### Section 3. Centralized MSR Control Organization

The intention of this recommendation is not to form another bureaucratic agency. If the oceanographers' interest in reducing access and predictability problems in EEZs remains, and an earnest desire is instilled in them to work as a unit, a central controlling body would serve a vital role.

It would have to assume the functions of the National Ocean Data Center of the National Oceanographic and Atmospheric Administration. This would avoid duplication of efforts and give the marine science community knowledge of activities that may be pertinent to each other's research.

The organization would also be the negotiating representative for foreign treaties and individual cruise arrangements of its member institutions. Input from those MSR institutions having substantial background in international relations and the support of the State Department would lend prestige to the



negotiating representative and would reduce the number of red-tape procedures to be followed in the present system of consent request. UNOLS currently performs some of these functions and could expand to assume the complete status of the central control organization.

Section 4. Standards and Obligations for Concluding  
Treaties Covering MSR in Coastal State EEZs

These standards and obligations include much of the current ideas found in the ICNT but make significant additions to the requirements of the coastal state. Coinciding with the US intention of developing a national MSR policy, it is recognized by the US that coastal states have a vital concern for the proper development of their EEZs. If this coastal state interest in the EEZ is not recognized by the US, then there would be no way to indicate that the research being conducted by the US is not detrimental to the interests of the coastal state.

This first recommendation states that, regardless of the training and knowledge of the people of the coastal state, they are aware and knowledgeable enough to recognize the needs of proper marine management of the EEZ. In conjunction with this requirement, the US must recognize the needs and concerns of the coastal state and its people. This obligation refers to the

potential economic benefits that may accrue to the coastal state from its coastal waters, and to any internal problems the country may have.

A broad statement should also be included as a standard for conducting MSR by any US institution. It is that scientific research and the development of the oceans are for the benefit of all mankind. This also serves as one of the national objectives.

Specific obligations that the US has towards the coastal state are similar to ICNT 249, but not as extensive and under a more lenient time frame. This is done to assist the oceanographers by eliminating some of the minute details demanded by the Group of 77 in UNCLOS, yet still provide adequate and informative data to the coastal state concerning all aspects of the proposed project.

Certain obligations are incurred without any specific time period indicated. These articles involve a radical change from any proposals made at UNCLOS and incorporate, as did some of the previous suggestions, the concept of technology transfer. The coastal state is given three choices after consenting to a US MSR project. First, the coastal state can participate in all phases of the project, at the entire expense of the US. Numbers of LDC participants and other relevant information will depend upon the type of research project and the space

on board the research vessel. Or, the coastal state can request financial aid of an amount equivalent to that which would have been spent had they participated in the approved project, for use on another problem of a marine nature, that is more directly relevant to their country's needs. Or, the coastal state can request financial assistance of the same amount for use in a non-marine related field which requires more immediate attention than the proposed project.

In return, the coastal state must meet specific obligations to the US. If they agree to either the first or second alternative, they must show, to the satisfaction of the Negotiating Representative of the Controlling Organization, that a national infrastructure is being developed and that a national commitment for the development of the marine environment and MSR exists within their country. This would include such items as a realistic budget, jobs, and recognition of the value of oceanographers.

Such requirements can help the US institutions better understand the attitudes of the governments with whom they wish to deal. It also provides an opportunity for the researching institution to withdraw its consent request and proposal if the conditions are not conducive to effective research. If the coastal state selects the third alternative, then they would be required not to interfere in any way whatsoever with the proposed project. If

any trouble occurs the US could then withdraw its assistance.

Additional US obligations to the coastal state include the right of the coastal state to have the research proposal reviewed by a competent international or regional organization. Realizing the limits of understanding of some of the LDCs for complex oceanographic studies, this may be a preferred method. It gives the coastal state the chance to have the proposal analyzed and interpreted so they may better understand the consequences of the research. If, at any time, the coastal state still wishes to deny consent, it may be assumed that the project, in some way, intrudes on the rights of the coastal state in the EEZ. The time limits involved for granting consent in this situation would have to be extended.

Other aspects of the obligations are for coastal state access to all data and samples, and open publication through appropriate local, US or international channels. The publication suggestion provides several alternatives. The local country is allowed to publish their own project interpretations and conclusions through their own channels, or the researching state will choose its own route of publication, no matter what actions the coastal state follows.

The only other obligations incurred by the coastal state are to facilitate access to ports and supplies

for the research vessels and to provide a response to a consent request within four months of the receipt of the request. This response should indicate whether or not the proposal has been approved. If it has not, why not, and whether a revised proposal can be submitted. If no response is received within the US time restrictions, then it must be assumed that the project has not been accepted. These requirements are necessary to increase the predictability for the researching institutions.



## NOTES

<sup>1</sup>Warren Wooster, "Pollution-Scientific Research," in Sixth LOS Institute Proceedings, p.133.

<sup>2</sup>John A. Knauss, "Marine Science and the 1974 Law of the Sea Conference," Science, June 28, 1974, p. 1338.

<sup>3</sup>Dennis O'Connor, ed., An Anonymous Draft Treaty of the Law of the Sea (Coral Gables, Florida: University of Miami Sea Grant, 1975), p. 109.

<sup>4</sup>Brown, "Marine Assistance Programs in the NSF," p. 199.

<sup>5</sup>Scott, "Implications of UNCLOS for MSR," p. 764.

## SUMMARY

The thesis has developed from the very early indications that many problems currently exist that detract from conducting efficient and meaningful MSR by US institutions. It has been shown that the development of the positions of the US and the LDCs since World War II have been in different directions and in pursuit of adverse objectives. This divergent development and the corresponding official views, combined with the rapid growth of international influence of the LDCs, has caused havoc to reign at UNCLOS since 1973.

Attempts by international organizations to provide an effective role as international managers of MSR have also met with limited success. The dominance of the international organizations by the Western societies has unintentionally ostracized the newly independent LDCs.

The UNCLOS and many other private seminars have indicated that a genuine concern for the future of the LDCs is lacking in developed nations. The power of the Group of 77 in UNCLOS has, in the mean time, been able to shape the future of the Law of the Sea. New territorial sea boundaries and an Exclusive Economic Zone have been established. Within the EEZ the coastal state has complete jurisdiction over MSR and all other

activities, except navigation, overflight and cable laying. These are irrefutable conclusions, and they will emerge from a successful or unsuccessful completion of UNCLOS.

The US has maintained its ancient traditions of a three mile territorial sea and freedom of scientific research, while unilaterally creating functional extensions of jurisdictional powers over fishing and pollution control. This has hurt the international image of the country and made a mockery of US demands at the LOS Conference.

Other methods were attempted, including separation of fundamental from applied research. The loopholes provided in the ICNT eliminate any efforts to successfully differentiate between fundamental and applied research. The concept of an "international authority" was disregarded as a matter of course. The negotiators were unable to convince the LDCs of anything that did not include recognition of the LDCs jurisdiction over MSR in the EEZ. Because of this the US negotiating team at UNCLOS has been required to accept the maximum demands of the developing countries.

The value of MSR cannot be questioned. The proof is overwhelming that it is of universal significance and should be continued in as many areas of the oceans as possible, under whatever restrictions are required. Until such problems are solved, it appears that a

commitment by the US for technology assistance to LDCs, the forming of a general policy for MSR programs, and a strong funding mechanism would help the US repress its egotistic image with the developing world. The developing states, on the other hand, must make similar internal commitments to the necessity of science programs, training, and creating positions for their personnel.

With all this in mind, a uniform national policy is proposed. It will decrease the access and predictability requirements for oceanographers desiring to conduct research in the EEZs of coastal states. Secondly, it will modify the gross divergence between the US and those countries not as developed. The policy forces the US oceanographic community to accept an entirely new approach to oceanography. Equally as significant, it requires the US government to take active notice of the importance of worldwide oceanography and of providing substantial educational assistance to the LDCs. In return the LDCs must understand it takes years to develop an infrastructure in marine science and that assistance from the developed nations will be needed to achieve their goals.

# APPENDIX I

## INDEPENDENT COUNTRIES OF THE WORLD

Country	UN	IOC/ LEPOR	TS	EEZ/EFZ	Indep. since 1944	LL/GDS
Afghanistan	x					LL
Albania	x		15			
Algeria	x		12		1962	GDS
Andorra						LL
Angola				200-EFZ	1975	
Argentina	x	3	200	200-EFZ		
Australia	x	6	3	12-EFZ		
Austria	x	1				LL
Bahamas	x		3	12-EFZ	1973	
Bahrain	x		3		1971	GDS
Bangladesh	x		12	200-EFZ 200-EFZ	1971	
Barbados	x		3		1966	
Belgium	x	3	3	12-EFZ		GDS
Benin	x		12	200-EFZ	1960	
Bhutan	x					LL
Bolivia		1*				LL
Botswana	x				1966	
Brazil	x	4	200	100-EFZ		
Bulgaria	x		12			GDS
Burma	x		12		1948	
Burundi	x				1962	LL
Cambodia	x		12		1949	
Cameroon	x		18		1960	
Canada	x	9	12	200-EFZ		
Cape Verde	x		100		1975	
Central Af- rican Empire	x				1960	LL
Chad	x				1960	LL
Chile	x	3	3	200-EFZ		
China, PR	x		12			
China, Rep.			3		1945	
Columbia	x	6	12			
Comoro Is.	x			200-EFZ	1975	
Congo	x	1	30		1960	
Costa Rica	x		12	200-EFZ 200-EFZ		
Cuba	x		3	200-EFZ		
Cyprus	x		12		1960	
Czechoslova- kia	x					LL
Denmark	x	3	3	200-EFZ		
Dominican Republic	x		6	12-EFZ		



Country	UN	IOC/ LEPOR	TS	EEZ/EFZ	Indep. since 1944	LL/GDS
Ecuador	x	3	200	200-EFZ		
El Salvador	x		200			
Equatorial Guinea	x		12		1968	
Ethiopia	x		12			GDS
Fiji	x		3		1970	
Finland	x		4	12-EFZ		GDS
France	x	19	12	12-EFZ		
Gabon	x	1*	100		1960	
Gambia	x		50	56-EFZ	1965	GDS
Germany, E.	x		3		1945	GDS
Germany, W.	x	15	3	200-EFZ		GDS
Ghana	x	1	30	100-EFZ	1957	
Grenada	x				1974	
Greece	x		6			GDS
Guatemala	x	1	12	200-EFZ		
Guinea	x		130		1958	
Guinea Bissaux			150		1974	
Guyana	x		3		1966	
Haiti	x		12	15-EFZ		
Honduras	x		12			
Hungary	x					LL
Iceland	x	2	4	200-EFZ	1944	
India	x	2	12	200-EFZ	1947	
Indonesia	x	1	12			
Iran	x		12	50-EFZ		
Iraq	x		12			GDS
Ireland	x		3	200-EFZ		
Israel	x	2	6		1948	
Italy	x	2	12			
Ivory Coast	x		6	12-EFZ	1960	
Jamaica	x	2	12		1962	GDS
Japan	x	6	3			
Jordan	x		3		1946	GDS
Khmer Rep.	x	1*			1975	
Kenya	x		12		1963	
Korea, N.			12		1945	
Korea, S.		3		12-EFZ	1945	
Kuwait	x		12			GDS
Laos	x				1949	LL
Lebanon	x	1		6-EFZ	1944	
Lesotho	x				1966	LL
Liberia	x	1*	200			
Libya	x		12		1951	
Liechtenstein						LL
Luxembourg	x					LL
Madagascar	x		50		1960	
Malawi	x				1964	LL

Country	UN	IOC/ LEPOR	TS	EEZ/EFZ	Indep. since 1944	LL/GDS
Malaysia	x	1	12		1957	
Maldives Is	x		3-55	200-EFZ	1965	
Mali	x				1960	LL
Malta	x	1	6	20-EFZ	1964	
Mauritania	x	1	30		1960	
Mauritius	x		30		1968	
Mexico	x	3	12	200-EFZ 200-EFZ		
Monaco		1	12	12-EFZ		
Mongolia	x				1946	LL
Morocco	x	2		70-EFZ	1956	
Mozambique	x			200-EFZ	1975	
Nauru			12	12-EFZ	1968	
Nepal	x					LL
Netherlands	x	6	3	12-EFZ		GDS
New Zealand	x	3	3	12-EFZ		
Nicaragua	x			200-EFZ		
Niger	x				1960	LL
Nigeria	x	1	30		1960	
Norway	x	4	4	200-EFZ		
Oman	x		12	50-EFZ		
Pakistan	x		12	200-EFZ	1947	
Panama	x		200			
Papua New Guinea	x				1975	
Paraguay	x					LL
Peru	x	3	200	200-EFZ		
Philippines	x	3	Special laws		1946	
Poland	x	1	3	12-EFZ		GDS
Portugal	x	4		200-EFZ		
Qatar	x		3		1971	GDS
Rhodesia					1965	LL
Romania	x	1	12			
Rwanda	x				1962	LL
San Marino						LL
Sao Tome & Principe	x				1975	
Saudi Arabia	x		12			
Senegal	x	2	150	200-EFZ	1960	
Seychelles			3	12-EFZ	1976	
Sierra Leone	x	1	200		1961	
Singapore	x		3		1965	GDS
Somalia	x		200		1960	
South Africa	x	2	6	12-EFZ 12-EFZ		
Southern Yemen	x		12		1967	
Spain	x	3	6	12-EFZ		

Country	UN	IOC/ LEPOR	TS	EEZ/EFZ	Indep. since 1944	LL/GDS
Sri Lanka	x		12	200-EFZ	1948	
Sudan	x		12		1956	GDS
Surinam	x				1975	
Swaziland	x				1968	LL
Sweden	x		4	12-EFZ		GDS
Switzerland		2				LL
Syria	x		12		1944	
Tanzania	x		50		1961	
Thailand	x	2	12			
Togo	x		12		1960	
Tonga			12		1970	
Trinidad & Tobago	x	1	12		1962	
Tunisia	x	1	12	12-EFZ	1956	
Turkey	x		6-12	12-EFZ		GDS
Uganda	x				1962	LL
UAE	x		12		1971	GDS
UAR(Egypt)	x		12			
United Kingdom	x	21	3	200-EFZ		
United States	x	22	3	200-EFZ		
U.S.S.R.	x	10	12	200-EFZ		
Upper Volta	x				1960	LL
Uruguay	x	2	200	200-EFZ		
Vatican City						LL
Venezuela	x	6	12			
Vietnam		2	12		1949	
Western Samoa			3		1962	
Yemen	x		12			
Yugoslavia	x		10			
Zaire	x		12		1960	
Zambia	x					LL

UN - United Nations Member

IOC/LEPOR - Number of projects a participant in  
\*Non-IOC member

TS - Territorial Sea in nautical miles

EEZ/EFZ- Exclusive Economic Zone or Exclusive Fishery  
Zone in nautical miles

Indep. since 1944 - Year of independence since 1944

LL/GDS- Land-locked or geographically disadvantaged

## APPENDIX II

### LETTERS

The enclosed letters were sent to over thirty individuals, organizations and governmental agencies and 120 members of the United Nations.



September 29, 1977

Dear Sir:

I am currently a graduate student in Marine Affairs and I am conducting research for my thesis in the area of International Marine Scientific Research. The continued failure of the Third United Nations Conference on the Law of the Sea to produce a treaty and the likelihood of United States unilateral action in the area of deep sea-bed mining may force development of marine research out of the United Nations forum.

I hope to be able to suggest a plan for international cooperation in this field, regardless of the outcome of the LOS conferences. My primary area of concern is the restrictions of research conducted within the exclusive economic zone and territorial sea of a coastal state. I would appreciate any official view taken by your organization on this aspect of the conference negotiations as well as any alternatives and opinions you consider worthwhile. Secondly, should a plan for international research be adopted for the economic zone and territorial sea by the majority of nations of the world, do you feel your organization is ready to yield any, some or all of its autonomous control to an international marine research governing body? Please explain as to whatever extent you could or could not comply. Finally, do you consider the Intergovernmental Oceanographic Commission of UNESCO to be effective in its function of conducting and managing international marine scientific research and why?

I understand possible security restrictions in answering these questions as well as being subject to official policy. Whatever information you can forward in this matter will be greatly appreciated.

Yours truly,

Thomas H. Brillat  
24 Brooks Street  
Cranston, Rhode Island  
02920



Dear Sir:

I am a graduate student in Marine Affairs and am working on a thesis concerning International Marine Scientific Research within the Exclusive Economic Zone of Coastal States. I would greatly appreciate any information your delegation or country can provide to the following questions.

1. Do you expect a comprehensive LOS Treaty to emerge from the UNCLOS III talks at Geneva in March?
2. Assuming failure of UNCLOS III do you feel a separate International agreement could or should be developed for the conducting of marine scientific research in Exclusive Economic Zones?
3. Would regional or bilateral treaties with researching states be considered or desired for marine scientific research in Exclusive Economic Zones?
4. Would there be any support for altering or reducing the number and type of obligations required by researching states for marine scientific research as mentioned in the current ICNT?
5. Do you believe that the resources and knowledge obtained from research done in the Exclusive Economic Zone are the common heritage of mankind?
6. Is the concept of a quid pro quo agreement with researching states acceptable to you and what would your country request in return for the permission (consent) to conduct marine scientific research in your Exclusive Economic Zone, if you possess one?
7. Should an international organization serve as the primary focal point for marine research done in the Exclusive Economic Zone?
8. Should land-locked states be given equal authority in decision making for research conducted in neighboring states' Exclusive Economic Zones'?

Thank you very much for your time and cooperation. I understand that security may prevent answering some of the questions presented above. Whatever information can be forwarded within the next two months will be a significant assistance.

Very truly yours,

Thomas H. Brillat

## BIBLIOGRAPHY

- Alexander, Lewis M. "Indices of National Interest in the Oceans." Ocean Development and International Law, vol. 1, no. 1 (1973).
- Alexander, Lewis M. Regional Arrangements in Ocean Affairs. Washington, D.C.: Office of Naval Research, 1977.
- Alexander, Lewis M., ed. The Law of the Sea: A New Geneva Conference, Proceedings of the Sixth Annual Conference of the Law of the Sea Institute. Kingston, RI: LOS Institute, 1971.
- Alexander, Lewis M., ed. Law of the Sea Institute: Seventh Annual Proceedings. Kingston, RI: LOS Institute, 1972.
- Alexander, Lewis M. "Independent Countries of the World." Class notes, GEG 571, University of Rhode Island, 1976. (Mimeographed.)
- Alexander, Lewis M. "Regional Arrangements in the Oceans." Class notes, GEG 571, University of Rhode Island, 1976. (Mimeographed.)
- Alexander, Lewis, M.; Nixon, Dennis; and Cameron, Francis X. "The Costs of Failure at the Third Law of the Sea Conference." Journal of Maritime Law and Commerce, vol. 9 (October, 1977).
- Andrassy, Juraj. International Law and the Resources of the Sea. New York: Columbia University Press, 1970.
- Bello, E.C. A Study Project on Mutual Assistance Between States Leading to a Transfer of Science and Technology. Ottawa: IOC-UNESCO, June, 1974.
- Bello, Emmanuel G. "The Present State of Marine Sciences and Oceanography in the Less Developed Countries." International Lawyer, vol. 8, no. 2 (April, 1974).
- Bernard, H. Russell; and Killworth, Peter D. "Scientists as Others See Them." Ocean Development and International Law, vol. 4, no. 3 (1977).
- Bokor-Szego, Hanna. New States and International Law. Budapest: Akademiai Kiado, 1970.

Botzum, John R., ed. Ocean Science News. Washington, D.C.: August 1, 1977 and September 12, 1977.

Brittin, Burdick H.; and Watson, Liselotte B. International Law for Seagoing Officers. Annapolis, Maryland: Naval Institute Press, 1972.

Burger, W. "Treaty Provisions Concerning Marine Science Research." Ocean Development and International Law, vol. 1, no. 2(1973).

Burke, William T. International Legal Problems of Scientific Research in the Oceans. Columbus, Ohio: Ohio State University Press, 1967.

Burke, William T. Scientific Research Articles in the Law of the Sea Informal Single Negotiating Text. Law of the Sea Institute Occasional Paper No. 25. Kingston, RI: LOS Institute, 1975.

Cheek, Conrad, H. "Law of the Sea: Effects of Varying Coastal State Controls on Marine Scientific Research." Ocean Development and International Law, vol. 1, no. 2 (1973).

Clift, A. Denis. Defense Interests and the National Oceanographic Commission. Washington, D.C.: US Government Printing Office, 1969.

Danhof, Clarence H. Interdependencies Between Public and Private Interests in the Advancement of New Technologies. Washington, D.C.: Commission on Marine Science, Engineering and Research, 1967.

Elias, T.O. The Modern Law of Treaties. Leyden, The Netherlands: A.W. Sijthoff, 1974.

Falk, Richard A.; and Mendlovitz, Saul H., eds. Regional Politics and World Order. San Francisco: W.H. Freeman & Co., 1973.

Fye, Paul M. "The Oceans: Common Heritage of Mankind?" Paper presented at the Woods Hole Oceanographic Institution Associates' Dinner, Woods Hole, Massachusetts, April, 1977.

Fye, Paul; Wooster, Warren; and Knauss, John. "Proposed United States Position on the Question of Freedom for Science in the Oceans." Working Paper, February 16, 1972.

- Galey, Margaret E. IOC: Its Capacity to Implement an International Decade of Ocean Exploration. Law of the Sea Institute, Occasional Paper No. 20. Kingston, RI: LOS Institute, 1973.
- Gamble, John Jr. ed. Law of the Sea Institute: Eighth Annual Proceedings. Kingston, RI: LOS Institute, 1973.
- Gandhi, P.S. Shipowners, Mariners and the New Law of the Sea. London: Fairplay Publications Ltd., 1977.
- Hodgeson, Robert D.; and Smith, Robert W. "Unilateralism: The New Wave of the Future." Class notes, GEG 571, University of Rhode Island, 1976. (Mimeographed.)
- Hollick, Ann L. "Notes and Comments: The Origins of 200-Mile Offshore Zones." American Journal of International Law, vol. 71, no. 3 (1977).
- Interiencia, vol.2, no. 5, September-October, 1977.
- International Ocean Exposition. Symposia of Expo '75. Okinawa, Japan: 1975.
- Janis, Mark W. "The Development of European Regional Law of the Sea." Ocean Development and International Law, vol. 1, no. 3 (1973).
- Janis, Mark W. Sea Power and the Law of the Sea. Lexington, Mass: D.C. Heath & Co., 1976.
- The Johns Hopkins University. Report of the Marine Science Workshop at Bologna, Italy. Washington, D.C.: The Johns Hopkins University School of Advanced International Studies, 1973.
- Johnston, Douglas M.; and Gold, Edgar. The Economic Zone in the Law of the Sea: Survey, Analysis and Appraisal of Current Trends. Law of the Sea Institute Occasional Paper No. 17. Kingston, RI: LOS Institute, 1973.
- Jones, Erin Bain. Law of the Sea-Oceanic Resources. Dallas: SMU Press, 1972.
- Kanenas. "Wide Limits and 'Equitable' Distribution of Seabed Resources." Ocean Development and International Law, vol. 1, no. 2 (1973).



- Kay, David. "International Transfer of Marine Technology: The Transfer Process and International Organizations." Ocean Development and International Law, vol. 2, no. 4 (1974).
- Knauss, John A. "Marine Science and the 1974 Law of the Sea Conference." Science, June 28, 1974.
- Knauss, John A. "The Military Role in the Ocean and Its Relation to the Law of the Sea." Paper given June 22, 1972.
- Knauss, John A. "A Scientists View of Freedom of Scientific Research Under Present Ocean Law." A paper given before the American Society of International Law, Miami, December 13, 1969.
- Knauss, John A. Private files at the Graduate School of Oceanography, University of Rhode Island.
- Knight, H. Gary. The Law of the Sea: Cases, Documents and Readings. Washington, D.C.: Nautilus Press, 1976-1977.
- Lay, Houston, S.; Churchill, Robin; and Nordquist, Myron, eds. New Directions in the Law of the Sea, 2 Vols. Dobbs Ferry, N.Y.: Oceana Publications, Inc., 1973.
- Lord McNair. The Law of Treaties. London: The Oxford University Press, 1961.
- Marshall, Nelson; and Lampe, Harlan, eds. The United States University Roles in Education for Marine Resources Development in the Less Developed Countries. A preliminary Report of a Workshop. Kingston, RI: Center for Ocean Management Studies, 1977.
- Miles, Ed. "Developments in the Law of the Sea." Nature. June 30, 1977.
- Moore, Jonathan R. "The Future of Scientific Research in Contiguous Resource Zones: Legal Aspects." International Lawyer, vol. 8, no. 2 (1974).
- Morris, Michael A. "Have United States Security Interests Really Been Sacrificed?" Ocean Development and International Law, vol. 4, no. 4 (1977).



- National Academy of Sciences. Marine Scientific Research and the Third Law of the Sea Conference. A Report of the US National SCOR Committee. Washington, D.C.: NAS, 1974.
- NAS, The Ocean Policy Committee. Marine Scientific Research and the Third Law of the Sea Conference: Second Substantive Session. Washington, D.C.: NAS, 1976.
- NAS, The Ocean Policy Committee. "The Marine Scientific Research Issue in the Law of the Sea Negotiations." Science, July 15, 1977.
- NAS. United States Marine Science Research Assistance to Foreign States: Proceedings of a Conference. Washington, D.C.: Ocean Affairs Board, NAS, 1974.
- National Geographic Society. National Geographic Atlas of the World. Washington, D.C.: National Geographic Society, 1975 and Inclusive Supplement 1976-1977.
- National Science Foundation. Office of the International Decade of Ocean Exploration. International Decade of Ocean Exploration-Progress Report, Volume Six. Washington, D.C.: U.S. Department of Commerce, 1977.
- Nyerere, Julius K, President of Tanzania. "The Poor Speak Out." Ocean World, January, 1978.
- O'Connor, Dennis, ed. An Anonymous Draft Treaty of the Law of the Sea. Coral Gables, Florida: University of Miami Sea Grant, 1975.
- Osgood, Robert; Hollick, Ann L.; Pearson, Charles S.; and Orr, James C. Toward a National Ocean Policy: 1976 and Beyond. Baltimore: Ocean Policy Project, The Johns Hopkins University, 1975.
- Oxman, Bernard H. "The Third United Nations Law of the Sea Conference: The 1977 New York Session." American Journal of International Law, vol. 72, no. 1 (1978).
- Raymond, Nicholas. "Sea Law: Unpleasant Options." Ocean World, January, 1978.
- Rosenne, Shabtai. The Law of Treaties: Guide to the Legislative History of the Vienna Convention. Leyden, The Netherlands: A.W. Sijthoff, 1970.

Ross, David A.; and Smith, Leah J. "Training and Technical Assistance in Marine Science - A Viable Transfer Product." Ocean Development and International Law, vol. 2, no. 3 (1974).

Ruivo, Mario. "Oceanography and the Law of the Sea." UNESCO Courrier, 1977.

Schaefer, Milton B. "Freedom of Scientific Research and Exploration in the Sea." The Stanford Journal of International Studies, vol. IV, (1969).

Schoettle, Enid Curtis B. Interdependencies Between Civilian and Military Interests and Responsibilities for the Advancement of New Technologies. Washington, D.C.: Commission on Marine Science, Engineering and Resources, 1967.

Scott, Desmond P.D. "Implications of the Third United Nations Conference on the Law of the Sea for Marine Scientific Research." Nature, June 30, 1977.

Sinha, S. Prakash. New Nations and the Law of Nations. Leyden, The Netherlands: A.W. Sijthoff, 1967.

Swing, John T. "Law of the Sea on the Brink." Oceans, vol. 10, no. 5 (1977).

Swing, John T. Rapporteur, Subcommittee on International Relations of the Advisory Committee on the Law of the Sea. "Third United Nations Conference on the Law of the Sea: Report on the 1976 New York Sessions." San Diego Law Review, vol. 14, no. 3 (1977).

Tandberg, Olof G. ed. Promotion of Marine Science in Developing Countries. Stockholm: The Royal Swedish Academy of Sciences, 1974.

United Nations. Educational, Scientific and Cultural Organization. Intergovernmental Oceanographic Commission. Comprehensive Outline of the Scope of the Long-term and Expanded Program of Oceanic exploration and Research. Paris: IOC Technical Series, No. 7, 1970.

United Nations. Educational, Scientific and Cultural Organization. Intergovernmental Oceanographic Commission. Draft of a General Scientific Framework for World Ocean Study. New York: UNESCO-IOC. 1964.

United Nations. Educational, Scientific and Cultural Organization. Intergovernmental Oceanographic Commission. The International Decade of Ocean Exploration 1971-1980. Paris: IOC Technical Series, No. 13, 1975.

United Nations. Educational, Scientific and Cultural Organization. Intergovernmental Oceanographic Commission. Legal Problems with Ocean Data Acquisition Systems-1962 to 1968. Paris: IOC Technical Series, 1969.

United Nations. Educational, Scientific and Cultural Organization. Intergovernmental Oceanographic Commission. Promoting Fundamental Scientific Research. Paris: IOC, SC/IOC-VI/32.

United Nations. Educational, Scientific and Cultural Organization. Intergovernmental Oceanographic Commission. Report by the Chairman of His Participation in the Third United Nations Conference on the Law of the Sea. Paris: IOC, 1977.

United Nations. IOC-The Second Session of the Working Committee for Training, Education and Mutual Assistance in the Marine Sciences. Summary Report. Paris: IOC, 1977.

United Nations. Kenya-Draft Articles on the EEZ Concept. UN Doc. A/AC 138/SC.11/L10.

United Nations. Office of Public Information. The Law of the Sea-The Fourth Session. New York: UN, 1976.

United Nations. Report on the African States-Regional Seminar on the Law of the Sea. UN Doc. A/AC 138/179. Yaounde, Cameroon, 1972.

U.S. Department of Commerce. National Technical Information Service. Proceedings of a Workshop on Problems of Scientific Research in the Third United Nations Law of the Sea Conference. Washington, D.C.: NAS and NSF, 1976.

U.S. Department of State. Treaties in Force. Washington, D.C.: US Government Printing Office, January 1, 1978.

- Vargas, Jorge A. Normative Aspects of Scientific Research in the Oceans, The Case of Mexico. Law of the Sea Institute Occasional Paper, No. 23. Kingston, RI: LOS Institute, 1974.
- Wenk, Ed. Jr. The Politics of the Ocean. Seattle: University of Washington Press, 1972.
- Winner, Ross. Marine Scientific Research and the Law of the Sea Conference: Some Proposed Amendments to the Revised Text. Woods Hole Oceanographic Institution Technical Report, Woods Hole: WHOI, 1976.
- Wooster, Warren S. ed. Freedom of Oceanic Research. New York: Crane, Russak and Co., Inc., 1973.

#### INTERVIEWS

- Mr. Robert Blumberg - Assistant to the U.S. Ambassador to the Law of the Sea Conference, October, 1977.
- Mr. Louis Brown - National Science Foundation, December, 1977.
- Mr. G.H. Cuminos - Director, United Nations Office on the Law of the Sea, November, 1977.
- Ms. A. deMarffy - Science Specialist, United Nations Office on the Law of the Sea, November, 1977.
- Mr. William Erb - Foreign Clearance Officer, U.S. Department of State, October, 1977.
- Dr. Paul Fye - Director, Woods Hole Oceanographic Institution, October, 1977.
- Dr. Luis Herrera - Intergovernmental Oceanographic Commission, November, 1977.
- Ms. Mary Hope Katsaros - National Academy of Science, Ocean Policy Committee, October, 1977.
- Dr. Robert Morse - Woods Hole Oceanographic Institution, October, 1977.
- Dr. Thomas Murray - National Oceanographic and Atmospheric Administration, International Sea Grant, Director, December, 1977.



Dr. David Ross - Woods Hole Oceanographic Institution, November, 1977.

Mr. Thomas Stetson - Director, University-National Oceanographic Laboratory System, October, 1977.

Professor Kazuo Sumi - Japanese Delegate to the Law of the Sea Conference, September, 1977.

Mr. John T. Swing - Council on International Relations, November, 1977.

Mr. Norman Wulf - U.S. Department of State, October, 1977.